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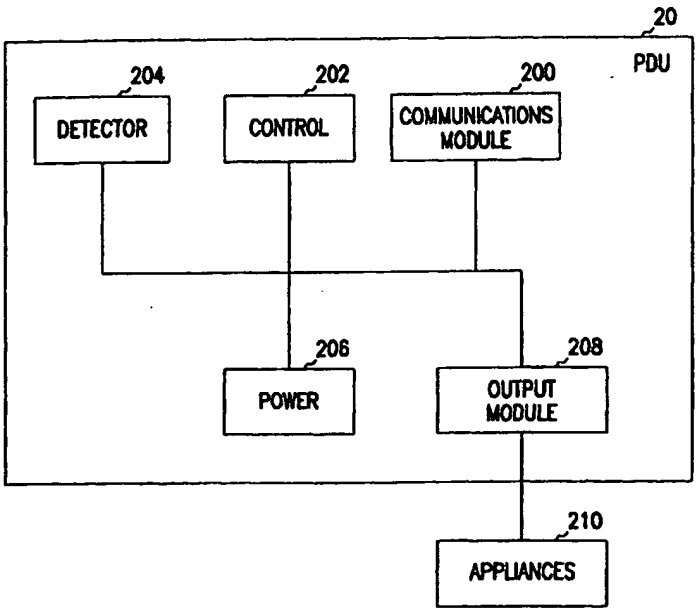

(57) Abstract

A system is described for detecting at least one event of interest. The system comprises a detector, a programmable controller, and a network. Upon detection of an event of interest, the detector communicates that information to the programmable controller through the network. The programmable controller allows a user, who may be in diverse geographic locations, to control the detector.

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Bi-directional Wireless Detection System

Field of the Invention

The present invention relates generally to security, alarm or detection systems and wireless systems; and in particular to a bidirectional wireless detection system.

Background

The provision of a security alarm detection system generally requires several components and a rather complex installation. Consequently, most detection systems require professional installation and setup.

Some of the current designs try to integrate many or all of the components and devices in a single enclosure or case. However, much of the complexity and cost remains since most of the devices and components are still in use.

Occasionally a detection system actuates automatic systems such as fire suppression or equipment shutdown, but in order for a detection system to be effective it usually must summon help. Onc approach for summoning help is to annunciate a local alarm that attracts attention. Another is to use a recorded message that is called to a list of phone numbers. Yet another is to use a professional central station monitoring service that receives data signals from the premise. As alarms, false alarms, and the indifference of neighbors increases, voluntary response to an alarm sound has virtually vanished. Hence local alarm annunciation is ineffective for garnering assistance. Indeed, the sound of an alarm has come to be perceived more as a nuisance and annoyance than a cause for attention. In a similar fashion, recorded messages are outlawed in a large number of 911 emergency dispatch centers and counting on reaching someone at home is not reliable. In addition, false alarms make recorded messages an irritation, especially since they are designed to repeat. So recorded messages are likewise considered ineffective. This leaves the use of a professional monitoring service which is inherently expensive and so many properties are left completely unprotected.

As a result, very low market penetration exists for reasons associated with current design. These include, but are not limited to, the requirement for professional design, the requirement for professional installation, and the requirement for professional monitoring. These three reasons make even so called "do-it-yourself" systems relatively poor sellers and even several major consumer electronic companies such as Magnavox, Zenith, Radio Shack

and others have had little success or outright failure with an over the counter, table-top type product.

Furthermore, for correct installation of a standard security system to a telephone network, some tabletop models require a special phone jack (RJ-31X) installed at the correct location (before any premise equipment is connected to the line) to assure the availability of the phone line. This may require installation by a telephone company or other professional. In addition, services on the user's line can interfere with successful alarm transmission, with touch tone service, call waiting, and in the future, Digital Subscriber Line services will make the connection even more complex.

A related problem is found in the user's interface with the detection system. In a typical system, the user interacts with the detection system through a device generally known as a keypad. The current keypad designs do not allow the user to roam broadly and one long-range design – the telephone line connection – does not provide for messages to user that are initiated by the system, instead the user independently calls into the system to retrieve messages or interact with the system. Although some alarm systems in use today can initiate a page to a person's pager, this still does not allow the user to exercise command and control functions in return. There is no single device that allows long-range, bidirectional communication and control of an alarm system.

What is needed in the art is an improved detection system that is friendly to a mobile user, that is easy to install, that is truly portable, and that is inexpensive, without the high costs associated with professional design, expert installation, and monitoring services.

Summary

One skilled in the art will readily recognize that the embodiments described solve all of these problems and many more not mentioned expressly herein.

In one embodiment, the detection system provides, among other things, a personal control panel and a portable detection unit which may be used independently or with a bidirectional communications network for short range and long range control panel and alarm monitoring and control functions. Several variations are provided including cellular, paging, satellite, narrowband PCS, narrowband trunked radio, and other communications systems with conventional and nonconventional protocols.

In one embodiment, the present detection system provides, among other things, the replacement of any or all of the user interface, transmission system, and control panel as

listed above, through the use of a long-range, two-way, wireless communication device such as a two-way pager. Accordingly, a person who owns a two-way pager or related device, may, for a much lower cost than is customary, own a detection system by incorporating only an additional paging/detection device as described herein. This embodiment of the system has the advantages, including, but not limited to, simple installation, reliable and secure built-in signal transmission, long range wireless user interface and long range system status annunciation. Currently, many detection systems communicate with a central station that manages the response function. However, this embodiment of the present system offers yet another advantage by communicating direct to the system owner who may then select the desired response. In one embodiment, the direct communications are optional so that the owner may select the central station approach or the direct approach without the services of a central station. Thus, the present system provides, among other things, instant and affordable protection for a wide variety of applications such as construction sites, vehicles, motel rooms, apartments, and small residential and commercial properties.

Furthermore, in one embodiment, the system incorporates low power components to provide the additional advantage of being able to operate solely on battery power for extended periods of time and not just as an emergency/temporary backup.

Thus, the present system, in various embodiments, offers advantages over a standard detection system which include, but are not limited to: low cost; easy, instantaneous installation by an ordinary consumer; reliable communications without connection to or interruption of the site telephone lines; long range control by the user; long range communication of alarm conditions and other signals to a user; long range wireless communication to a central station included instead of as an option; no requirement for connecting to a central station with its attendant monthly costs, if the user desires to monitor their system themselves; and, no need for a permanent power supply. Thus, the system and its various embodiments offers a portable detection system that can provide protection for a variety of applications including, but not limited to, homes and businesses, and to applications without power or phone lines like vehicles and construction sites.

This summary is intended to provide a brief overview of some of the embodiments of the present system, and is not intended in an exclusive or exhaustive sense, and the scope of the invention is to be determined by the attached claims and their equivalents.

Description of the Drawings

FIG. 1 is a diagram demonstrating operation of a personal control panel and portable detection unit according to one embodiment of the present system.

FIG. 2 is a block diagram of a portable detector unit according to one embodiment of the present system.

FIG. 3A is a block diagram of a communications module according to one embodiment of the present system.

FIG. 3B is a block diagram of a communications module according to one embodiment of the present system.

FIG. 3C is a block diagram of a communications module according to one embodiment of the present system.

FIG. 4 is a block diagram of a personal control panel according to one embodiment of the present system.

FIG. 5 is a diagram showing various communication modes of different components of one detection system according to one embodiment of the present system.

FIG. 6 is a diagram showing a user controlling their detection system from a distance, according to one embodiment of the present system.

FIG. 7 is a block diagram showing the components of a basic security system, according to one embodiment of the present system.

FIG. 8 is a flow chart showing the passing and processing of messages from the detection system to remote users.

FIG. 9 is a table depicting a sample message splitting or parsing strategy for parsing messages using the short message feature of ReFLEX™ (a Motorola Trademark) networks.

Detailed System Description

This detailed description provides a number of different embodiments of the present system. The embodiments provided herein are not intended in an exclusive or limited sense, and variations may exist in organization, dimension, hardware, software, mechanical design and configuration without departing from the claimed invention, the scope of which is provided by the attached claims and equivalents thereof.

The present system provides many benefits, including but not limited to, low cost, easy installation, limited power requirements and wireless operation and signal transmission. Many other benefits will be appreciated by those skilled in the art upon reading and understanding the present description.

FIG. 1 shows one example of a premises 30, such as a house, garage, yard, warehouse, vehicle or any fixed, portable, or mobile location or structure intended for detection monitoring. A Portable Detection Unit 20 ("PDU 20") is located in or on the premises 30 for detection or monitoring of one or more events or conditions. Detection of events and status of the PDU 20 is communicated to Personal Control Panel 10 ("PCP 10"). PCP 10 is shown "off premises" but may be used "on premises" as well. The PCP 10 is useful for monitoring the condition of the PDU 20 and for reception of detected events. PCP 10 is also useful for, among other things, transmitting information to PDU 20 for the purposes of either arming the PDU 20, disarming PDU 20, and/or cancelling an alarm deemed false by the user of PCP 10. In one embodiment, PCP 10 and PDU 20 communicate using a short range communication device which is dedicated for such communications and which also may include a limited range, such as approximately that of the premises. Other short range embodiments are possible without departing from the present system. In one embodiment, PCP 10 and PDU 20 communicate using a combination of short range communications and long range communications, depending on the distance of PCP 10 from PDU 20. In yet another embodiment, PCP 10 and PDU 20 communicate using a long range communication system, even if the communications are conducted in proximity. Such a system incorporates an existing wireless communications network, such as a cellular network, satellite network, paging network, narrowband PCS, narrowband trunk radio, or other wireless communication network. Combinations of such networks and other embodiments may be substituted without departing from the present system.

FIG. 2 shows one embodiment of a PDU 20 which includes a communications module 200, a control 202, one or more detectors 204, and power 206. In one embodiment PDU 20 is a self powered detector capable of communications with a PCP 10 in one embodiment, a wireless communications network (not shown in FIG. 2) in another embodiment, or both a PCP 10 and a wireless communications network in yet another embodiment. Other embodiments and combinations are possible without departing from the present system.

In the PDU 20 shown in FIG. 2, there is a detector 204 which detects events, including, but not limited to, motion detection, temperature detection, water detection, vibration detection, breakage detection, smoke detection, carbon monoxide detection, and proximity detection. Other detectors or combinations of detectors may be used without departing from the present system. In various embodiments, control 202 coordinates

communications between the communications module 200 and the outside world (such as PCP 10 or a wireless communication network, for example). Control 202 may also process instructions received by communications module 200 regarding arming the PDU 20, disarming PDU 20, and cancellation of alarms, to name a few operations. With control 202, several operations may be performed using multiple detectors.

In one embodiment, the PDU 20 includes an output module 208 which provides control outputs to auxiliary devices and appliances 210. In one embodiment, the auxiliary devices and appliances include building appliances such as heating, ventilation, and air condition, or home appliances such as a coffee pot. The outputs may be used to actuate an audible or visual annunciator in the premise such as an alarm. In other applications the outputs may be connected to appliances to provide actuation or control. The outputs may be signaled by changes in voltages, impedance, current, magnetic field, electromagnetic energy such as radio frequency signals, infrared signals or optical signals, and audible or other forms of mechanical energy. The outputs may be direct changes of state, analog, or digital in form. Several embodiments are possible, and the examples given herein are not intended in a limiting or restrictive sense. The output module may be activated and controlled by the PCP 10 or the control 202, or by the actuation of the detector 204 or a combination of these.

In one embodiment the PDU 20 is self powered. In one embodiment the PDU 20 is powered using an auxiliary power supply. In one embodiment the PDU 20 is charged using an auxiliary power supply.

FIG. 3A, FIG. 3B and FIG. 3C demonstrate a variety of short range and long range communications modules 200 in various embodiment examples. For instance, in FIG. 3A, the communication modules 200 includes a short range module, such as a bidirectional short range communication system with a network module. The network module may be used either for long range communications over a wireless communications network or for short range communications where the network is also used. Such a system may include programmable or automatically selecting electronics to decide whether to conduct communications between the PDU 20 and the outside world using the short range module or the network module. In one embodiment the system may employ different portions of the network to provide short range, intermediate range, or long range network connections, depending on the distance between the PDU and any receiving component of the system, such as PCP or central station. In one such embodiment, the network automatically adjusts for different required transmission distances.

In one embodiment, the network module is a cellular communications module. In one embodiment, the network module is a paging module, for example, a two-way paging module. In one embodiment the network module is a satellite module. In one embodiment the network module is a wideband or narrowband PCS module. In one embodiment the network module is a wideband or narrowband trunk radio module. Other modules are possible without departing from the present system. In one embodiment, the network module supports multiple network systems, such as a cellular module and a two-way paging module, for example. In such embodiments, the system may prefer one form of network communications over another and may switch depending on a variety of factors such as available service, signal strength, or types of communications being supported. For example, the cellular module may be used as a default and the paging module may take over once cellular service is either weak or otherwise unavailable. Other permutations are possible without departing from the present system.

FIG. 3B shows an embodiment including a network module. The variations in embodiments of network modules and uses of each described above apply here as well.

FIG. 3C shows an embodiment where a short range communications module is used for conducting communications between the PDU 20 and the outside world. Any conventional and nonconventional bidirectional short range communications may be employed for short range communications.

FIG. 4 shows a block diagram of one embodiment of a PCP 10 having communications module 400, control 402, I/O 404 and power 406. In one embodiment, the PCP 10 has a counterpart communications module to PDU 20 so that the communications are possible using the same communication means. For example, if PDU 20 has a network module and a short range module, as shown in FIG. 3A, then PCP 10, in this embodiment, includes a network module and a short range module, capable of supporting bidirectional communications between PDU 20, PCP 10, and possibly a wireless communication network. In other embodiments, the PCP 10 need not have counterpart communications modules 400 to those in PDU 20.

Control 402 of PCP 10 is used to coordinate instructions entered on I/O 404 for transmission to the PDU 20 using communication module 400. In one embodiment I/O 404 is a keypad for entering instructions with a display for viewing status information. In one embodiment an audio indicator is used to signal a detected event. In one embodiment a visual indicator is used to signal a detected event. In one embodiment a vibration indicator is

used to signal a detected event. In one embodiment separate indicators are provided for a plurality of detection functions.

In one embodiment, the power supply of PCP 406 is used to power the device. In one embodiment, the PCP 10 is powered using an auxiliary power supply. In one embodiment the PCP 10 is charged using an auxiliary power supply.

FIG. 5 is a diagram demonstrating different communication modes possible with the present system according to one embodiment. In this figure PDU 501 at premises A may communicate over a wireless communication network 530 to transceive signals relating to detected events with central station 540 or PCP 512. If PCP 512 is in range for short range communications, then PCP 512 may receive signals directly from a PDU, such as PDU 502 shown at premises B in FIG. 5.

PCP 512 may also communicate with other PDUs and with other PCPs, such as PCP 513. In FIG 5 the communications between PCP 512 and PCP 513 are not shown over network 530, however, such communications are possible in various embodiments of the present system. In like manner, PDUs may communicate with multiple PCPs, not all possessing identical communication modules. Inter-protocol and inter-network communication may be managed separately, for example, both paging and cellular networks and modules communicate with each other through an IP-based protocol, such as over the Internet.

In one embodiment, PCP 513 is programmable to assume the identity of another PCP, such as PCP 512. When PCP 513 assumes the identity of PCP 512, it acts as if it were PCP 512 to the external world. One application where this is particularly useful is for when the native PCP becomes disabled or failed to operate. In this case, another PCP with the proper authorization and access code is used to perform any monitoring and/or control function. There are several methods of assuming identity: In one embodiment, PCP 512 and PCP 513 are part of a trusting domain of a network. In another embodiment, PCP 512 and PCP 513 are friends in the sense of object methodologies. In another embodiment, PCP 513 assumes the identity of PCP 512 by entering a certain security code, such as a password. In another embodiment, PCP 513 includes an alias of PCP 512, where aliases of PCP 512 have the same security clearance of access as PCP 512. In another embodiment, PCP 513 is an alias of PCP 512, where aliases of PCP 512 have a predetermined level of security clearance of access of PCP 512. These examples are not exclusive or exhaustive and other embodiments exist that do not depart from the present systems and methods.

In one embodiment wireless communication network 530 is a cellular telephone network. In another embodiment wireless communication network 530 is a two-way paging network. In one embodiment wireless communication network 530 is a satellite network. In one embodiment wireless communication network 530 is a wideband or narrowband PCS network. In one embodiment wireless communication network 530 is a wideband or narrowband trunk radio network. Other networks are possible without departing from the present system. In one embodiment, wireless communication network 530 supports multiple network systems, such as cellular mode and a two-way paging network, for example. In such embodiments, the system may prefer one form of network communications to another and may switch depending on a variety of factors such as available service, signal strength, or types of communications being supported. For example, the cellular network may be used as the primary network and the paging network may take over once cellular service is either weak or otherwise unavailable. In another embodiment the transmission may originate in one type of network such as a paging network and terminate in another type of network such as a cellular network. The symbol for wireless communication network 530 is not intended to be limited to literally a single communication tower and may include a plurality of such towers and associated wired telephone, ISDN, fiber optic, and other communications infrastructures in various combinations. Such systems may employ conventional or specialized protocols without departing from the present system. For example, MOTOROLA Corporation has introduced two way paging protocols such as ReFLEX 25 and ReFLEX 50. Other protocols and wireless communication networks may be employed without departing from the present system.

SECURITY

In the situation where alarms are provided for detected events, the central station 540 may receive such alarms and process them for dispatch assistance 550 from emergency personnel. In one embodiment, false alarms are identified and cancelled prior to transmission to the central station by an operator of a PCP, such as PCP 512 or PCP 513. Systems for alarm cancellation and monitoring are provided in this disclosure and in the patent applications incorporated by reference herein.

In embodiments for security detection, the security industry has developed numerous types of detection devices for monitoring many types of conditions. These detection devices

feature an output which changes state upon detection of the event being monitored by the device.

One embodiment of the present system uses the output of such detection devices and connects them as an input signal for a two-way, long-range, wireless communicator such as one employing narrowband PCS (two-way paging), cell phone type transmitter, PCS, cellemetry, or other similar device. The detection devices include, but are not limited to, motion detectors, door switches, water sensors, smoke detectors, temperature sensors, or a loop(s) of detection devices to detect a condition or occurrence and provide an output. The outputs may be signaled by changes in voltages, impedance, current, magnetic field, electromagnetic energy such as radio frequency signals, infrared signals or optical signals, and audible or other forms of mechanical energy. The outputs may be direct changes of state, analog, or digital in form. Several embodiments are possible, and the examples given herein are not intended in a limiting or restrictive sense.

The present system, in several embodiments, provides the signals from the detection devices to the two-way, long-range, wireless communicator instead of connecting them to a security alarm control system.

In one embodiment, the detection system incorporates on-site, a long-range two-way wireless communication devices which are compatible for communications with a two-way wireless communication device that is carried by the system user. The system user then utilizes their communication device to control and receive messages from the detection system. In one embodiment, the on-site communication device may trigger local annunciators like horns or flashing lights or actuate other equipment such as heating lights or mechanical equipment.

FIG. 6. shows one embodiment of the present design in a detection system wherein a motion detector located in a home is connected to a two-way communications device, such as one employing two-way paging communication capabilities. The motion detector provides a signal to the two-way pager when detecting motion. The two-way pager transmits a signal over the paging network to the owner anywhere in the paging network. In one embodiment, if the person carries a two-way pager, then the person may elect to perform a function in response to the detected event, for example to disarm the detector by providing the proper command to the motion detector over the two-way paging network. Other embodiments are possible without departing from the present system and a number of functions may be supported by various embodiments of the present detection system.

FIG. 7 shows a block diagram of a detection system according to one embodiment of the present system. The block diagram shows the relationship between the communication module 710 and the detector 720 in PDU 770. The two way pager 760 may serve as the PCP in this system. It can be used to monitor alarms, disarm the system and to cancel false alarms, among other things. The system provides for optional transmission to other destinations 750, which may be accomplished over a wireless bidirectional communication network, among other things.

Wireless Network

The wireless network employed may be any consumer or proprietary network designed to serve users in range of the detection system, including, but not limited to, a cellular network such as analog or digital cellular systems employing such protocols and designs as PCS, CDMA, TDMA; a paging network such as those employing FLEX™ or POCSAG™; other data networks such as RAMNET™ or Ardis™; proprietary special design networks such as Alarmnet™ or Procom™; or proprietary wireless networks.

In one embodiment the detection system incorporates ReFLEX™ (a Motorola™ trademark) 25 or 50 narrow band PCS products and services (types of wireless technologies used for 2-way pagers). The advantage to this type of technology is that it requires low power consumption for devices, has inexpensive devices, and provides flexible 2-way communication.

PDU Communications Module

In one embodiment, a pager-like device, such as a device employing pager or other 2-way long range wireless communication capabilities, is connected to one or more detection devices. The interface between these devices is designed to function with standard manufactured detection devices using for example, but not limited to, small control relays or voltage triggers, or a standard communication protocol like RS-232, or built as a single integrated circuit with a detection device and thus requiring no external interface. The relay/voltage trigger embodiment provides a design that can be easily adapted to a wide array of existing detection devices or a circuit loop of devices. The integrated circuit embodiment provides a low net cost if the device is produced in large quantities.

In one embodiment the 2-way pager device located at the protected location is a CreataLink™ as manufactured by Motorola company. These are a series of intelligence enhanced 2-way narrowband PCS modems operating with ReFLEX 25 or ReFLEX 50 protocols. These products are being constantly upgraded and currently being manufactured as CreataLink2; soon to be manufactured as CreataLink2XLT. The CreataLink device is incorporated with other sensors and control circuitry as needed to provide one version of a PDU. The CreataLink devices may be modified and adapted for use with detectors and other bidirectional wireless network communication modules, as provided in herein.

PCP

In one embodiment, the users are in two-way communication with their detection system via a wireless means in order to provide the highest assurance of contact wherever the user may be. This allows the user to be informed of detected events and to control the detection system from in, nearby, or distant from the location of the premises.

The PCP may be of several different designs. For example, in one embodiment it may be a standard pager or other one-way wireless device. This would function satisfactorily for a user needing only annunciation of a detected condition and requiring no interactive capability with the detecting portion of the system.

In another embodiment, the PCP may be a "response messaging" capable two way pager. This is service where a two way pager receives a message and optional multiple-choice responses. The user can select the appropriate responses. Such a design may be adapted to provide basic control options related to the detection system and any central station monitoring.

In another embodiment, the PCP may be a programmable two-way paging device such as the Motorola PageWriter™ 2000. This is a class of device that acts as both a two-way pager and a handheld computer also known as a PDA (Personal Digital Assistant).

In another embodiment, the PCP may be a cellular telephone. The PCP and the protected location device may communicate of compatible design may communicate with each other through the use of touch tones, digital information, voice messaging, or cellemetry technologies. The cell phone may be analog or digital in any of the various technologies employed by the cell phone industry such as PCS, or CDMA, or TDMA, or others. The cell

phone may have programmable capability such as is found in a Nokia™ 9000 series of devices.

In embodiments where the user employs standard or adapted paging or cell phones as their PCP, security passwords are entered by using numeric or other keys on a phone. In the embodiment of a pager, a distinct order of pressing certain keys could provide the equivalent of a security code. For example, 3 short and 1 long on a certain key; or once on key 'a', once on key 'b', and once more on key 'a'.

In another embodiment, the PCP is a handheld computer. Many PDAs offer programmable capability and connectivity to various types of long-range wireless networks. Another example of this type of device is the PalmPilot™ or Palm series of devices manufactured by 3-COM™. In these embodiments where a programmable PCP is used such as a PalmPilot, PageWriter or programmable cell phone, the programmable nature of the devices facilitates the implementation of industry-standard designs and would allow for the development of a program written for the devices.

In another embodiment, a special manufactured device may be manufactured to serve the needs of the system user.

Network Modifications for a PCP with both Long-Range Wireless Capability and Adapted Short-Range Wireless Capability

In one embodiment the PCP employs an adaptation of the long-range capability of such devices to create a short-range wireless communication without full network intervention. Because much of the communication between the PCP and the PDU is in relatively close proximity, the wireless devices and/or the network may be adapted to communicate more directly instead of through the entire network. More direct communication speeds up the connection and reduces the burden of traffic in the network.

Such an implementation would have applications beyond the use as described for the detection system herein. It may be used for connecting between nearby users of pagers at the mall, parents to children in the neighborhood and between workers in a workplace.

In one embodiment narrowband PCS is used in two-way paging networks. For example using ReFLEX 25 or 50 protocols or similar services, nearby pager devices may communicate more directly between devices, rather than having to pass a message through the entire network. There are several alternative embodiments of this as detailed below.

In one embodiment, paging devices are modified to communicate directly with each other. Since ReFLEX protocols normally use different frequencies for transmission and reception to and from the network, the devices may not be used without some modification. For example, the transmission on frequency "a" by one paging device would not be received by another paging device expecting to receive on frequency "b". Therefore, in one embodiment the transmitting paging device may change its frequency before sending direct to another device. This is accomplished automatically or as a manual switch, either in software or otherwise.

In another embodiment, the transmission is routed to the first tower or just into the local network. Most paging carriers use satellites for transmission to and from localized areas. In this embodiment, traffic may avoid the satellite portion of the route and save traffic burden there.

In any of the previous embodiments of this section, the network is able to supervise traffic for billing and other purposes. In addition, in these embodiments, messages may be tagged as "direct connect" for routing purposes. See the information on messaging described herein.

In another embodiment, a separate short range wireless system is incorporated into a unified device employing both a short range wireless system and a long range wireless system. In this embodiment, a key fob type of device such as though currently used for unlocking automobiles and disarming detection systems is combined with a long range wireless device such as those described herein. This embodiment affords the advantage of a no-service-fee wireless connection for nearby use and a service-fee wireless network for long-range use.

PCP with other Manufactured Systems

The various PCP design embodiments described herein may benefit the system described herein and also many other security, alarm, detection and control systems manufactured presently and in the past, rather than the PDU described herein. For example, in an embodiment using a two-way paging network, a Motorola PageWriter™ 2000 with an alarm program, may function as the user interface, while a CreataLink™ 2XT may provide the connection to the security, alarm, detection or control system as manufactured currently. In one embodiment, the CreataLink™ may be connected directly to a manufacturer's

system's control panel using the I/O signals, the RS232 or TTL serial interface, or it may be connected using these ports through a separate interface board.

For example, in the security alarm industry, some alarm panels support control functions with simple I/O signals, some support RS232 or other serial interfaces, and many have a proprietary serial connection available for remote keypad control. In another embodiment with a custom interface board or with adapted programming in the alarm panel a device such as the CreataLink™ is connected to the alarm control panel. These teachings are applicable to all of the major security industry manufacturers of alarm control equipment, such as Ademco™, ITI ™, DSC™, Napco™, Radionics™, DMP™, and many others.

Because of the tremendous variability of manufactured security, alarm, detection and control systems, and the range of PCPs, as described herein, available to control these systems, the details of each and every specific design would be virtually endless. Hence, the embodiments provided herein are not intended in an exclusive or limited sense, and variations may exist in organization, dimension, hardware, software, mechanical design and configuration without departing from the claimed invention, the scope of which is provided by the attached claims and equivalents thereof.

Position Transmitted with Detected Condition

The design of the detection and control system with its low power requirements and bidirectional wireless communication capabilities makes it suited to mobile applications as well as the fixed applications previously discussed. However, the response required for a mobile application often requires knowledge of where the premises have moved. For example, in protecting vehicles such as automobiles, trucks, and boats, the protected item may have moved.

In one embodiment of the detection system, a GPS receiver is incorporated and the system transmits GPS coordinates along with the detection signals. In another embodiment of the detection system, other types of coordinates are transmitted such as with LORAN.

In one embodiment the user device may incorporate mapping capabilities for locating the mobile unit. In one embodiment the mapping capabilities may be resident in the user device or in another embodiment the maps may be downloaded from a central storage facility. In another embodiment a directional message could be displayed showing which direction and/or distance the detection signal emanated from. Such a coordinate may be updated from time to time.

Security Detection System Features

In one embodiment, the software in the PDU, the PCP, and the network is adapted to deliver the standard features of a typical detection, alarm, security, or detection system. These features are currently common to most manufacturers today, including ITI, Ademco, Napco, and others. Examples of these features include but are not limited to:

- system on/off (home-away-off, arm-disarm),
- delay zones,
- bypass/force arm,
- restore,
- opening and closing by user,
- prevention of multiple alarm transmissions in a specified period,
- user control of system related functions,

Thus, such embodiments provide features standard to a security alarm system without requiring a separate control panel to provide them. In addition, some of the embodiments provide enhancements to the standard features. One reason for the improvements is that a system user can provide interactive management functions of their system from the PCP regardless of where they are located. No longer do they need to be at the protected location. Some of the functions are discussed below, however, others exist and the following is not intended to be a limiting of exhaustive discussion of functions.

Zone Bypass. This feature allows a user to turn off the transmission of signals for a particular detector or group of detectors. This is done for the following common reasons:

1. When the user is on site and wants to retain some protection, for example intrusion detection, but wants to turn off some interior motion detectors.
2. When the person is prone to accidentally trigger a detector. For example, as listed in item 1, perhaps there is an interior motion detector downstairs, but they sleep upstairs; they would prefer to have the motion detector on while sleeping, but often forget and trip the detector when they come down in the morning.
3. When a person is first learning to use their system, sometimes the entire system is bypassed so emergency agencies are not dispatched.
4. When a zone seems to be prone to false-alarms and the source of the signals is not determined or repaired. The zone may send a real or a false alarm.

One problem with zone bypass is that it is an all-or-nothing design. The zone(s) or detector(s) is either transmitting signals or not. In one embodiment of the present system, a new type of condition, which we herein label "zone confirmation" is supported by the system. Conditions 2,3,4 above would be better served in many cases if the user was notified of an detected event and may then optionally "confirm" the condition before it was transmitted to the central station. This confirmation may be required, or it may have a built in delay period where an opportunity to cancel would be given before the alarm was transmitted. The user's confirmation or lack thereof may be transmitted to the central station and add valuable information to the response effort.

Arm/Disarm Confirmation. When a user armed or disarmed their system (turned their system on or off), confirmation of the on or off is sent back to the PCP that they are carrying and doing the activation from. This is currently not possible even with the short-range wireless devices used in the industry currently.

Delay Zones. Delay zones are built into detection control panels to provide time for a user to enter their code into a keypad or other device and then enter or exit the premise before the protection is activated. Because upon entry, this delay is activated, there is a desire to make the delay short. Otherwise an intruder might have time to tamper with or destroy the system before it transmits a signal.

However, delay zones may be built into the PCP instead. This would allow a user to optionally cancel or confirm an event condition before the network transmitted it forward to a central station or other site. As a result, the system would be effectively instantaneous, that is – continuously armed without delay zones, allowing an intruder no delay time to defeat a system, but allowing a user an opportunity to disarm the system.

Alarm Verification/Cancellation. Due to the large number of false alarms associated with security systems, it is ordinary for central monitoring centers to verify alarms with users before dispatching agencies. Since this detection system uses a method whereby the user can be in contact with the central monitoring station anywhere they are located, the verification could occur via the user's interface. Hence, an embodiment of the present system may incorporate special alarm verification/cancellation technology as described in U.S. Provisional Application No. 60/098,270, filed Aug. 28, 1998 and U.S. Patent Application

Serial No. 09/219,737, filed Dec. 22, 1998, both of which are hereby incorporated by reference in their entirety.

Other embodiments are possible and the examples provided herein are intended to be demonstrative and not exclusive or exhaustive of the present invention, which is determined by the scope of the appended claims and the full range of equivalents to which they are entitled.

System Messaging

Capcodes

In one embodiment using NPCS (Narrowband PCS) as the wireless transmission method, pager capcodes are used for addressing. Capcodes are the addresses used to identify individual addresses and there is a unique capcode for each pager or common pager address. In common addressing – pagers can hold more than one capcode for broadcast messaging – a common capcode identifies a group of users. For example, capcode 978654903 may uniquely indicate Joe Smith's pager while another capcode may also reside on Joe Smith's pager for broadcast receipt of the news or weather which is received simultaneously by multiple users with the same broadcast capcode. Therefore, capcodes are used to identify an individual user or group of users and likewise identify the detection system that is associated with the users.

Rapid Data Transmission

It is important that the data is received rapidly both to enhance protection and to help to provide rapid verification in order to cancel alarms. The transmission of data in this embodiment is done in a rapid burst method. The reason for this is as follows: As available in NPCS transmissions, for example with FLEX 25 and 50 – two of the protocols currently available for NPCS services – there is a short message availability (11 bit) that allows for very rapid transmission. In cellular there is a technology called Cellemetry or Microburst that accomplishes a similar function. This short and rapid messaging is a feature of many large scale wireless networks. The short message is typically available to be sent immediately and rapidly and often at a lower cost. For example, in FLEX 25, longer messages require time to set up transmission frames. By using a short burst transmission, as much as 20 seconds or more may be saved in the transmission time requirement. This delay is of serious consequence because in the security industry, life and property may be in peril. In addition,

delays make it difficult to coordinate the rapidly proceeding dispatch between the central station and the users. However, the short message has constraints of its own: it is a short message. Therefore, the message must be encoded. A solution for encoding in FLEX related services is presented later.

Hence, in one embodiment a short predetermined digitally encoded message is transmitted from the detection system to the PCP carried by remote users and/or to the central station.

At the central station a look up table is employed to decode the message. In a similar fashion, a look up table may be employed by the PCP to decode the message. FIG. 8 shows one such example of a look up table.

Message Decoding in the Network

Usually transmission networks are designed to simply receive a message and transport it to a destination. The network doesn't "read" the message or "act" on it except to read an address and send it to the destination. However, as networks become imbued with enhanced computing capability, they can read more of the message and process messaging far beyond mere transport.

Therefore, as an alternative embodiment, the look up table may reside in the network and the message may be decoded by the network before it is delivered to any destination. This is a good way for delivering a message to the PCPs unable to decode messages such as limited capability pagers or cell phones. The encoded burst message would then be decoded in the network and a user would be delivered an English or other language message according to the interpretation or look up table.

The effect is that an encoded burst message that looks like "00101000111" may be decoded in the network and read out "Burglary Area 4" on a pager. The same numeric message may be decoded after receipt in a more sophisticated user device or after receipt at the central station.

Alternative Message Paths

One embodiment of this design uses a single two way wireless device carried by the users instead of one device to receive the message and another to transmit the verification information to the central station. This saves cost and simplifies design. However, two separate devices may be used.

In other embodiments, the notification of the remote users may be accomplished simultaneously with the central station or instantly relayed by the central station or any other relay point.

Again, in one embodiment, the transmission of data may be done in a rapid burst method. In this process, a short predetermined digitally encoded message is transmitted to the central station from the user device.

Alternatively, longer messages can be employed, but they may take longer to be received.

In the event that NPCS is the selected wireless transmission method, a standard two way pager using response paging is used as the response device carried by the user to communication/control with the detection system and to the central station.

In this design option a response message can either be presaved on the two way pager or can be transmitted to the pager. Since time is important, a presaved response message is the best solution since it does not require any additional transmission time.

Other custom designed devices and devices using other wireless technologies can also be used to accomplish the same effect.

Encoding

Encoding is a straightforward process. The following encoding example is offered for the use of NPCS FLEX 25 two way pager wireless services.

In FLEX 25 an 11 bit message (an 11 bit message is eleven zeros or ones) is available for a burst transmission. This message is then split or parsed into registry sections for the purpose of sending a message. The table (FIG. 9) describes sample registers and their potential purpose.

As a result a message like "001/0111/0101" (slashes indicate breaks in the register of the look up table and are not transmitted) can be interpreted to mean: send a message to Joe Smith's pager capcode 957843756 reading "Fire area 5" and send a message "001/0111/0101" to Central Station A and send "001/0111/0101" Central Station B if Central Station A is not receiving.

The above register size, order, and meaning can be changed to meet the needs of individual network designs. However, the purpose and use remains unchanged. Similar encoding registers can be used in any wireless transmission short bursting format.

New Technologies

The above embodiments may be implemented using Wireless Access Protocol (WAP). The above embodiments may also be implemented using Bluetooth standard. One implementation includes allowing the plugging of a Bluetooth module to allow wireless connectivity from wireless devices to a variety of consumer products.

Conclusion

Other embodiments are possible and the examples provided herein are intended to be demonstrative and not exclusive or exhaustive of the present invention, which is determined by the scope of the appended claims and the full range of equivalents to which they are entitled.

We claim:

1. A method, whereby a detected event is communicated to remote users through the use of a long-range, bidirectional, wireless network connected by a wireless transmission device to the detection devices and connected to the user through the use of personal programmable communication devices.

2. The method of claim 1, whereby other devices such as alarms and bells and actuation of equipment is accomplished by control of the user through the personal programmable communication device; and control and outputs associated with the smart-modem; and network intervention.

3. The method of claim 1, whereby through the use of low power demand devices the system is both portable and mobile requiring no connection to permanent power supply.

4. The method of claim 1, wherein the bidirectional long distance wireless network is a paging network.

5. The method of claim 1, wherein the bidirectional long distance wireless network is a cell phone network.

6. The method of claim 1, wherein the bidirectional long distance wireless network is a two-way paging network.

7. The method of claim 1, wherein the bidirectional long distance wireless network is a REFLEX 25 paging network.

8. The method of claim 1, wherein the bidirectional long distance wireless network is a REFLEX 50 paging network.

9. The method of claim 1, comprising sending its signals to a remote central monitoring station.

10. The method of claim 1, wherein the central station and the user receive nearly simultaneous notification.

11. The method of claim 9, wherein the signals to the remote central station are sent over a telephone network.

12. The method of claim 9, wherein the signals to the remote central station are sent over a bidirectional long distance wireless network.

13. The method of claim 12, wherein the bidirectional long distance wireless network is a two-way paging network.

14. The method of claim 12, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

15. The method of claim 12, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

16. The method of claim 12, wherein the bidirectional long distance wireless network is a cell phone network.

17. A detection system consisting primarily of four types of components:

a long-range, bidirectional wireless transmission device

coupled to one or more detection devices;

the wireless transmission device receiving a signal from one or more detection devices and transmitting the signal through a long-range, bidirectional, wireless network

to a remote user carrying a wireless communication device capable of receiving the signal.

18. The detection system of claim 17, connected to and controlling local annunciation and other equipment such as alarms, bells, strobes, or equipment actuation and control.

19. The detection system of claim 17, operating on low power devices powered by battery providing a detection system without need of connection to permanent power or hardwired telephone line.

20. The detection system of claim 17, wherein the bidirectional long distance wireless network is a paging network.

21. The detection system of claim 17, wherein the bidirectional long distance wireless network is a cell phone network.

22. The detection system of claim 17, wherein the bidirectional long distance wireless network is a two-way paging network.

23. The detection system of claim 17, wherein the bidirectional long distance wireless network is a REFLEX 25 paging network.

24. The detection system of claim 17, wherein the bidirectional long distance wireless network is a REFLEX 50 paging network.

25. The detection system of claim 17, comprising sending its signals to a remote central monitoring station.

26. The detection system of claim 17, wherein the central station and the user receive nearly simultaneous notification.

27. The detection system of claim 25, wherein the signals to the remote central station are sent over a telephone network.

28. The detection system of claim 25, wherein the signals to the remote central station are sent over a bidirectional long distance wireless network.

29. The detection system of claim 28, wherein the bidirectional long distance wireless network is a two-way paging network.

30. The detection system of claim 28, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

31. The detection system of claim 28, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

32. The detection system of claim 28, wherein the bidirectional long distance wireless network is a cell phone network.

33. A method, whereby a remote user is able to exercise control over a detection system

and its related and connected components

through the use of personal programmable communication devices carried by the user;

communicating through a long-range, bidirectional, wireless network

to a detection system connected to a wireless transceiver.

34. The method of claim 33, wherein security passwords may be used by using numeric or other keys on the device.

35. The method of claim 33, wherein security passwords may be used by pressing a distinct order and/or duration of certain keys.

36. The method of claim 33, wherein the bidirectional long distance wireless network is a two-way paging network.

37. The method of claim 33, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

38. The method of claim 33, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

39. The method of claim 33, wherein the bidirectional long distance wireless network is a cell phone network.

40. The method of claim 33, wherein voice generated information is provided to the user.

41. The method of claim 33, wherein voice commands are interpreted by a system for command and control functions.

42. The method of claim 33, wherein data generated by a system is displayed on a screen available to the user.

43. The method of claim 33, wherein data entered via a keypad provides commands interpreted by a system for command and control functions.

44. The method of claim 33, wherein data generated by a system is displayed with lights on the user device.

45. The method of claim 33, wherein the user exercises control via appropriately labeled function keys.

46. The method of claim 33, wherein the user device is a commercially manufactured hand-held computing device, connected to a bidirectional long distance wireless network.

47. The method of claim 46, using a one way pager.

48. The method of claim 46, using a pager configured with response messaging.

49. The method of claim 46, using an adapted two way pager.

50. The method of claim 46, using a programmable or adapted paging device.

51. The method of claim 46, using a programmable or adapted cellular phone device.

52. The method of claim 46, using a Palm Pilot™, a Palm Professional™, a Palm III™, or other Palm Pilot™ series of devices.

53. The method of claim 46, using a PageWriter™2000 or other PageWriter™ series of devices.

54. The method of claim 46 using a programmable pager.

55. The method of claim 46, using a Nokia™ 9000 or other Nokia™ programmable series of devices.

56. The method of claim 46, using a programmable cell phone.

57. A user device for command and control of a security, alarm, or detection system that uses a bidirectional long distance wireless network for communication with the system.

58. The user device of claim 57, wherein security passwords are entered by using alpha, numeric or other keys on the device.

59. The user device of claim 57, wherein security passwords are entered by pressing a distinct order and/or duration of certain keys.

60. The user device of claim 57, wherein the bidirectional long distance wireless network is a two-way paging network.

61. The user device of claim 57, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

62. The user device of claim 57, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

63. The user device of claim 57, wherein the bidirectional long distance wireless network is a cell phone network.

64. The user device of claim 57, wherein voice generated information is provided to the user.

65. The user device of claim 57, wherein voice commands are interpreted by a system for command and control functions.

66. The user device of claim 57, wherein data generated by a system is displayed on a screen available to the user.

67. The user device of claim 57, wherein data entered via a keypad provides commands interpreted by a system for command and control functions.

68. The user device of claim of 57, wherein data generated by a system is displayed with lights on the user device.

69. The user device of claim 57, wherein the user exercises control via appropriately labeled function keys.

70. The user device of claim 57, wherein the user device is a commercially manufactured handheld computing device, connected to a bidirectional long distance wireless network.

71. The user device of claim 70, comprising a one way pager.

72. The user device of claim 70, comprising a pager configured with response messaging.

73. The user device of claim 70, comprising an adapted two way pager.

74. The user device of claim 70, comprising a programmable or adapted paging device.

75. The user device of claim 70, comprising a programmable or adapted cellular phone device.

76. The user device of claim 70, comprising a Palm Pilot™, a Palm Professional™, a Palm III™, or other Palm Pilot™ series of devices.

77. The user device of claim 70, comprising a PageWriter™2000 or other PageWriter™ series of devices.

78. The user device of claim 70, comprising a Nokia™ 9000 or other Nokia™ programmable series of devices.

79. The method of claim 1 using a method whereby a remote user is able to exercise control over a detection system

and its related and connected components

through the use of personal programmable communication devices carried by the user; communicating through a long-range, bidirectional, wireless network

to a detection system connected to a wireless transceiver.

80. The method of claim 79, wherein security passwords may be used by using numeric or other keys on the device.

81. The method of claim 79, wherein security passwords may be used by pressing a distinct order and/or duration of certain keys.

82. The method of claim 79, wherein the bidirectional long distance wireless network is a two-way paging network.

83. The method of claim 79, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

84. The method of claim 79, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

85. The method of claim 79, wherein the bidirectional long distance wireless network is a cell phone network.

86. The method of claim 79, wherein voice generated information is provided to the user.

87. The method of claim 79, wherein voice commands are interpreted by a system for command and control functions.

88. The method of claim 79, wherein data generated by a system is displayed on a screen available to the user.

89. The method of claim 79, wherein data entered via a keypad provides commands interpreted by a system for command and control functions.

90. The method of claim 79, wherein data generated by a system is displayed with lights on the user device.

91. The method of claim 79, wherein the user exercises control via appropriately labeled function keys.

92. The method of claim 79, wherein the user device is a commercially manufactured hand-held computing device, connected to a bidirectional long distance wireless network.

93. The method of claim 92, using a one way pager.

94. The method of claim 92, using a pager configured with response messaging.

95. The method of claim 92, using an adapted two way pager.

96. The method of claim 92, using a programmable or adapted paging device.

97. The method of claim 92, using a programmable or adapted cellular phone device.

98. The method of claim 92, using a Palm Pilot™, a Palm Professional™, a Palm III™, or other Palm Pilot™ series of devices.

99. The method of claim 92, using a PageWriter™2000 or other PageWriter™ series of devices.

100. The method of claim 92 using a programmable pager.

101. The method of claim 92, using a Nokia™ 9000 or other Nokia™ programmable series of devices.

102. The method of claim 92, using a programmable cell phone.

103. The detection system of claim 17 comprising a user device for command and control of a security, alarm, or detection system that uses a bidirectional long distance wireless network. for communication with the system.

104. The detection system of claim 103, wherein security passwords are entered by using alpha, numeric or other keys on the device.

105. The detection system of claim 103, wherein security passwords are entered by pressing a distinct order and/or duration of certain keys.

106. The detection system of claim 103, wherein the bidirectional long distance wireless network is a two-way paging network.

107. The detection system of claim 103, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

108. The detection system of claim 103, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

109. The detection system of claim 103, wherein the bidirectional long distance wireless network is a cell phone network.

110. The detection system of claim 103, wherein voice generated information is provided to the user.

111. The detection system of claim 103, wherein voice commands are interpreted by a system for command and control functions.

112. The detection system of claim 103, wherein data generated by a system is displayed on a screen available to the user.

113. The detection system of claim 103, wherein data entered via a keypad provides commands interpreted by a system for command and control functions.

114. The detection system of claim 103, wherein data generated by a system is displayed with lights on the user device.

115. The detection system of claim 103, wherein the user exercises control via appropriately labeled function keys.

116. The detection system of claim 103, wherein the user device is a commercially manufactured handheld computing device, connected to a bidirectional long distance wireless network.

117. The user device of claim 116, comprising a one way pager.

118. The user device of claim 116, comprising a pager configured with response messaging.

119. The user device of claim 116, comprising an adapted two way pager.

120. The user device of claim 116, comprising a programmable or adapted paging device.

121. The user device of claim 116, comprising a programmable or adapted cellular phone device.

122. The user device of claim 116, comprising a Palm Pilot™, a Palm Professional™, a Palm III™, or other Palm Pilot™ series of devices.

123. The user device of claim 116, comprising a PageWriter™2000 or other PageWriter™ series of devices.

124. The user device of claim 116, comprising a Nokia™ 9000 or other Nokia™ programmable series of devices.

125. A method for a wireless personal communication and control device comprising

optionally using one of two or more separate frequencies;

wherein at least one of the frequencies connects to a bidirectional long distance wireless network;

wherein at least one of the frequencies connects to a local wireless receiver or transceiver.

126. The method of claim 125, wherein the bidirectional long distance wireless network is a two-way paging network..

127. The method of claim 125, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

128. The method of claim 125, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

129. The method of claim 125, wherein the bidirectional long distance wireless network is a cell phone network.

130. The method of claim 125, wherein the application is used for more direct pager to pager communication.

131. The method of claim 125, wherein the application is used for more direct communication of devices over a paging type network.

132. The method of claim 125, wherein the local bidirectional network uses the BlueTooth standard.

133. A method of providing control of a detection, alarm or security system using the wireless communication and control method of claim 125.

134. The method of claim 1 that uses the wireless communication and control method of claim 125.

135. The method of claim 125, wherein the frequencies are selected manually.

136. The method of claim 125, wherein the frequencies are selected automatically.

137. The method of claim 125, wherein the user is notified by information on the device, whether visual, vibratory or audible, of the status of a transmission.

138. A wireless personal communication and control device comprising

optionally using one of two or more separate frequencies;

wherein at least one of the frequencies connects to a bidirectional long distance wireless network;

wherein at least one of the frequencies connects to a local wireless receiver or transceiver.

139. The device of claim 138, wherein the bidirectional long distance wireless network is a two-way paging network.

140. The device of claim 138, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

141. The device of claim 138, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

142. The device of claim 138, wherein the bidirectional long distance wireless network is a cell phone network.

143. The device of claim 138, wherein the application is used for more direct pager to pager communication.

144. The device of claim 138, wherein the application is used for more direct communication of devices over a paging type network.

145. The device of claim 138, wherein the local bidirectional network uses the BlueTooth standard.

146. A device for providing control of a detection, alarm or security system using the wireless communication and control device of claim 138.

147. A device comprising means for the method of claim 1 that uses the wireless communication and control device of claim 138.

148. The device of claim 138, wherein the frequencies are selected manually.

149. The device of claim 138, wherein the frequencies are selected automatically.

150. The device of claim 138, wherein the user is notified by information on the device, whether visual, vibratory or audible, of the status of a transmission.

151. A method for a wireless personal communication and control comprising

optionally using one of two or more combined transceivers or transmitters;

wherein at least one of the transceivers or transmitters connects to a bidirectional long distance wireless network;

wherein at least one of the transceivers or transmitters connects to a local wireless receiver or transceiver.

152. The method of claim 151, wherein the bidirectional long distance wireless network is a two-way paging network.

153. The method of claim 151, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

154. The method of claim 151, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

155. The method of claim 151, wherein the bidirectional long distance wireless network is a cell phone network.

156. The method of claim 151, wherein the application is used for more direct pager to pager communication.

157. The method of claim 151, wherein the application is used for more direct communication of devices over a paging type network.

158. The method of claim 151, wherein the local bidirectional network uses the BlueTooth standard.

159. A method of providing control of a detection, alarm or security system using the wireless communication and control method of claim 151.

160. The method of claim 1 that uses the wireless communication and control method of claim 151.

161. The method of claim 151, wherein the frequencies are selected manually.

162. The method of claim 151, wherein the frequencies are selected automatically.

163. The method of claim 151, wherein the user is notified by information on the device, whether visual, vibratory or audible, of the status of a transmission.

164. A wireless personal communication and control device comprising

optionally using one of two or more combined transceivers or transmitters;

wherein at least one of the transceivers or transmitters connects to a bidirectional long distance wireless network;

wherein at least one of the transceivers or transmitters connects to a local wireless receiver or transceiver.

165. The device of claim 164, wherein the bidirectional long distance wireless network is a two-way paging network.

166. The device of claim 164, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

167. The device of claim 164, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

168. The device of claim 164, wherein the bidirectional long distance wireless network is a cell phone network.

169. The device of claim 164, wherein the application is used for more direct pager to pager communication.

170. The device of claim 164, wherein the application is used for more direct communication of devices over a paging type network.

171. The device of claim 164, wherein the local bidirectional network uses the BlueTooth standard.

172. A device for providing control of a detection, alarm or security system using the wireless communication and control device of claim 164.

173. A device comprising means for the method of claim 1 that uses the wireless communication and control device of claim 164.

174. The device of claim 164, wherein the frequencies are selected manually.

175. The device of claim 164, wherein the frequencies are selected automatically.

176. The device of claim 164, wherein the user is notified by information on the device, whether visual, vibratory or audible, of the status of a transmission.

177. A method for a wireless personal communication and control service wherein

a personal communication device can communicate through a bidirectional long distance wireless network;

and the local network reads a message header and routes the message directly to a local destination,

or uses the entire network capability to route the message to a more distant destination.

178. The method of claim 177, wherein the bidirectional long distance wireless network is a two-way paging network.

179. The method of claim 177, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

180. The method of claim 177, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

181. The method of claim 177, wherein the bidirectional long distance wireless network is a cell phone network.

182. The method of claim 177, wherein the application is used for more direct pager to pager communication.

183. The method of claim 177, wherein the application is used for more direct communication of devices over a paging type network.

184. The method of claim 177, wherein the local bidirectional network uses the BlueTooth standard.

185. A method of providing control of a detection, alarm or security system using the wireless communication and control method of claim 177.

186. The method of claim 1 that uses the wireless communication and control method of claim 177.

187. The method of claim 177, wherein the frequencies are selected manually.

188. The method of claim 177, wherein the frequencies are selected automatically.

189. The method of claim 177, wherein the user is notified by information on the device, whether visual, vibratory or audible, of the status of a transmission.

190. A wireless personal communication and control device wherein

a personal communication device may communicate through a bidirectional long distance wireless network;

and the local network reads a message header and routes the message directly to a local destination,

or uses the entire network capability to route the message to a more distant destination.

191. The device of claim 190, wherein the bidirectional long distance wireless network is a two-way paging network.

192. The device of claim 190, wherein the bidirectional long distance wireless network is a REFLEX 25 two-way paging network.

193. The device of claim 190, wherein the bidirectional long distance wireless network is a REFLEX 50 two-way paging network.

194. The device of claim 190, wherein the bidirectional long distance wireless network is a cell phone network.

195. The device of claim 190, wherein the application is used for more direct pager to pager communication.

196. The device of claim 190, wherein the application is used for more direct communication of devices over a paging type network.

197. The device of claim 190, wherein the local bidirectional network uses the BlueTooth standard.

198. A device for providing control of a detection, alarm or security system using the wireless communication and control device of claim 190.

199. A device comprising means for the method of claim 1 that uses the wireless communication and control device of claim 190.

200. The device of claim 190, wherein the frequencies are selected manually.

201. The device of claim 190, wherein the frequencies are selected automatically.

202. The device of claim 190, wherein the user is notified by information on the device, whether visual, vibratory or audible, of the status of a transmission.

203. The method of claim 1, wherein the long-range, bidirectional wireless transmission uses a wireless modem or smart-modem that is designed to link to a bidirectional long

distance wireless network.

204. The method of claim 1, wherein the long-range, bidirectional wireless transmission device is a CreataLink™ series product.

205. The detection system of claim 17, wherein the long-range, bidirectional wireless transmission device is a wireless modem or smart-modem that is designed to link to a bidirectional long distance wireless network.

206. The detection system of claim 17, wherein the long-range, bidirectional wireless transmission device is a CreataLink™ series product.

207. The method of claim 1, using a fixed coordinate generator to locate system coordinates.

208. The method of claim 207, comprising using a GPS receiver to locate system coordinates.

209. The method of claim 207, wherein the location coordinates are transmitted to the user.

210. The method of claim 207, wherein GPS coordinates are transmitted to the user.

211. The method of claim 207, wherein the location coordinates are transmitted to a central response center.

212. The method of claim 207, wherein the GPS coordinates are transmitted to a central response center.

213. The method of claim 207, wherein the user device has resident mapping capabilities.

214. The method of claim 207, wherein the user device has maps downloaded from a central database.

215. The method of claim 207, wherein the central response center and the user device both receive notification of a detected event, and the central response center downloads the maps to the remote user.

216. The method of claim 207, wherein the user device contains a coordinate determining device and with the coordinates provided to the remote user from the detected event location is able to generate direction information relative to the last known event location.

217. The method of claim 207, wherein the user device contains a GPS receiver and with the coordinates provided to the remote user from the detected event location is able to generate direction information relative to the last known event location.

218. The method of claim 207, wherein the user device contains a coordinate determining device and with the coordinates provided to the remote user from the detected event location is able to generate distance information relative to the last known event location.

219. The method of any of the above method claims, wherein the user device contains a GPS receiver and with the coordinates provided to the remote user from the detected event location is able to generate distance information relative to the last known event location.

220. The method of claim 207, wherein the coordinates are updated by the detection system on an interval basis.

221. The detection system of claim 17, comprising using a fixed coordinate generator to locate system coordinates.

222. The detection system of claim 221, comprising using a GPS receiver to locate system coordinates.

223. The detection system of claim 221, wherein the location coordinates are transmitted to the user.

224. The detection system of claim 221, wherein GPS coordinates are transmitted to the user.

225. The detection system of claim 221, wherein the location coordinates are transmitted to a central response center.

226. The detection system of claim 221, wherein the GPS coordinates are transmitted to a central response center.

227. The detection system of claim 221, wherein the user device has resident mapping capabilities.

228. The detection system of claim 221, wherein the user device has maps downloaded from a central database.

229. The detection system of claim 221, wherein the central response center and the user device both receive notification of a detected event, and the central response center downloads the maps to the remote user.

230. The detection system of claim 221, wherein the user device contains a coordinate determining device and with the coordinates provided to the remote user from the detected event location is able to generate direction information relative to the last known event

location.

231. The detection system of claim 221, wherein the user device contains a GPS receiver and with the coordinates provided to the remote user from the detected event location is able to generate direction information relative to the last known event location.

232. The detection system of claim 221, wherein the user device contains a coordinate determining device and with the coordinates provided to the remote user from the detected event location is able to generate distance information relative to the last known event location.

233. The detection system of claim 221, wherein the user device contains a GPS receiver and with the coordinates provided to the remote user from the detected event location is able to generate distance information relative to the last known event location.

234. The detection system of claim 221, wherein the coordinates are updated by the detection system on an interval basis.

235. A method whereby the functions inherent in many detection, alarm, and security systems

such as system on/off (home-away-off, arm-disarm), delay zones, bypass/force arm, restore, opening and closing by user, prevention of multiple alarm transmissions in a specified period, and user control of system related functions

is derived through the use of the inherent intelligence

found in smart-modems, personal programmable communication devices and communication networks.

236. The detection system of claim 17, that provides the feature set standard to alarm systems such as system on/off (home-away-off, arm-disarm), delay zones, bypass/force arm, restore, opening and closing by user, prevention of multiple alarm transmissions in a

specified period, and user control of system related functions.

237. A method, wherein,
a detected event is confirmed
before the transmission of signals to the central response center
from a particular detector or group of detectors
by providing the information and opportunity to a user through the use of an interface device.

238. The method of claim 237 whereby the detected event is relayed through the user device.

239. The method of claim 237 wherein there is a delay time built into the system or the user device as an opportunity to confirm a signal transmission.

240. The method of claim 237 wherein the confirmation is required before transmission of signals regarding a detected event.

241. The method of claim 237 wherein a user confirmed event is coded with the meaning of "confirmed" at the central response center.

242. The method of claim 237 wherein the confirmation is optional before transmission of signals regarding a detected event.

243. The method of claim 237 wherein the event is coded with the meaning of "unconfirmed" at the central response center if the user has not acted upon it.

244. A method, whereby a detection, security or alarm system uses the method detailed in claim 237 and its associated claims.

245. A method according to claim 1, using the method detailed in claim 237 and its associated claims.

246. A detection system, whereby,
a detected event is confirmed
before the transmission of signals to the central response center
from a particular detector or group of detectors
by providing the information and opportunity to a user through the use of an interface device.

247. The system of claim 246, whereby the detected event is relayed through a user device.

248. The system of claim 246, wherein there is a delay time built into the system or the user device as an opportunity to confirm a signal transmission.

249. The system of claim 246, wherein the confirmation is required before transmission of signals regarding a detected event.

250. The system of claim 246, wherein a user confirmed event is coded with the meaning of "confirmed" at the central response center.

251. The system of claim 246, wherein the confirmation is optional before transmission of signals regarding a detected event.

252. The system of claim 246, wherein the event is coded with the meaning of "unconfirmed" at the central response center if the user has not acted upon it.

253. A detection, security or alarm device that uses the system detailed in claim 246 and its associated claims.

254. The detection system of claim 17 using the system detailed in claim 246 and its associated claims.

255. A method, according to claim 33,
wherein a detection system responds with status information
to a remote user
regarding a current effort by the same user or another
to arm or disarm a system or change any system status or controls.

256. The method of claim 255, wherein the status indicator is visual, auditory or vibratory on the user device.

257. The method of claim 255, wherein the status indicator is visual or auditory at the location of or in proximity to the detection system.

258. A method, whereby any detection, security or alarm system uses the method in claim 255 and its associated claims.

259. A method according to claim 1, using the method detailed in claim 255 and its associated claims.

260. A device, according to claim 57,
wherein a detection system responds with status information
to a remote user
regarding a current effort by the same user or another
to arm or disarm a system or change any system status or controls.

261. The device of claim 260 wherein the status indicator is visual, auditory or vibratory on the user device.

262. The device of claim 260, wherein the status indicator is a separate visual or auditory device at the location of or in proximity to the detection system.

263. A device, whereby any detection, security or alarm system uses the device in claim 260 and its associated claims.

264. A detection system according to claim 17, using the method detailed in claim 260 and its associated claims.

265. A method, according to claim 1, comprising:

coordinating a dispatch process at a central station based on a signal transmitted from the remote user in response to the detected event;

wherein the remote user may cancel the dispatch process to prevent false dispatching.

266. The method of claim 265, wherein the remote user may verify an alarm for the detected event.

267. The method of claim 265, wherein the signal from the remote user is transmitted to the central station.

268. The method of claim 265, wherein the signal from the remote user is transmitted to the central station to adjust or direct dispatch efforts.

269. The method of claim 265, wherein the signal from the remote user is transmitted to the central station to indicate a false alarm.

270. The detection system of claim 17, wherein,

the wireless two way communication device is operable

to provide a signal to cancel a dispatch response

by control of a user.

271. The detection system of claim 270, wherein the signal is transmitted to the central station to cancel an alarm.

272. The detection system of claim 270, wherein the signal is transmitted to the alarm system to cancel an alarm.

273. The detection system of claim 270, wherein the signal is transmitted to the central station to verify an alarm.

274. The detection system of claim 270, wherein the signal is transmitted to the central station to indicate a false alarm.

275. The detection system of claim 270, wherein the signal is transmitted to the central station to adjust or direct dispatch efforts.

276. The method of claim 1, comprising using an encoding method to burst transmit data between the detected event, the user and the central station.

277. The method of claim 1, comprising using message interpretation within a transmission network to coordinate addressing and retransmission of messages.

278. The method of claim 1, comprising using message interpretation within a transmission network to handle various messages differently so that the type of message changes its transmission path, handling, and encoding protocol.

279. The method of claim 1, comprising using capcodes to identify any number of and any combination of a detection system, a personal communication device, and the central station.

280. The method of claim 1, comprising using capcodes to communicate with any number of and any combination of a detection system, a personal communication device, and the central station.

281. The method of claim 1, comprising using response paging to respond to the detected event.

282. The method of claim 1, comprising using one or more presaved messages on a personal communication device to respond to the detected event.

283. The method of claim 1, comprising using one or more presaved response messages on a personal communication device to respond to the detected event.

284. The method of claim 1, comprising converting codes into text relating to the detected event using a personal communication device.

285. The method of claim 1, comprising converting codes into text relating to the detected event using the bidirectional long distance wireless network.

286. The detection system of claim 17, wherein encoding is used to burst transmit data between the detected event, the user and the central station.

287. The detection system of claim 17, wherein message interpretation is used within a transmission network to coordinate addressing and retransmission of messages.

288. The detection system of claim 17, wherein message interpretation is used within a transmission network to handle various messages differently so that the type of message changes its transmission path, handling, and encoding protocol.

289. The detection system of claim 17, comprising using capcodes to identify any number of and any combination of the alarm system, the communication device, and the

central station.

290. The detection system of claim 17, comprising using response paging to respond to the detected event.

291. The detection system of claim 17, comprising using one or more presaved messages on the communication device to respond to the detected event.

292. The detection system of claim 17, comprising using one or more presaved response messages on the communication device to respond to a detected event.

293. The detection system of claim 17, comprising converting codes into text relating to a detected event using the communication device.

294. The detection system of claim 17, comprising converting codes into text relating to the detected event using a bidirectional long distance wireless network.

295. A detection system comprising:

a personal control panel;

a portable detection unit; and

a bi-directional communications network to allow the portable detection unit to communicate with the personal control panel.

296. The detection system of claim 295, wherein the bi-directional communications network is selected from a group consisting essentially of a cellular network, a paging network, a satellite network, a narrowband Personal Communication System (PCS) network, and a narrowband trunked radio network.

297. The detection system of claim 295, wherein the personal control panel includes a low-power device.

298. A detection system comprising:

a long-range, two-way, wireless communication device;

a portable detection unit; and

a bi-directional communications network to allow the portable detection unit to communicate with the long-range, two-way, wireless communication device.

299. The detection system of claim 298, wherein the long-range, two-way, wireless communication device includes a two-way pager.

300. The detection system of claim 298, further comprising a long-range wireless user interface.

301. The detection system of claim 298, further comprising a long-range system status annunciation.

302. The detection of claim 298, wherein the long-range, two-way, wireless communication device includes a low-power device.

303. A method of detection comprising:

detecting an event of interest to an interested party;

communicating with the interested party the event of interest;

selecting by the interested party a desired response that is based on the event of interest.

304. The method of claim 303, wherein the desired response includes selectively bypassing the communication of the event of interest to a central station,

305. The method of claim 303, wherein the desired response includes selectively notifying the event of interest to a central station.

306. A system comprising:

a portable detection unit to detect a detected condition of interest,

a personal control panel to receive the detected condition of interest; and

a communication system to facilitate communication between the portable detection unit and the personal control panel.

307. The system of claim 306, wherein the personal control panel is adapted to monitor the status of the portable detection unit.

308. The system of claim 306, wherein the personal control panel is adapted to arm or disarm the portable detection unit,

309. The system of claim 306, wherein the personal control panel is adapted to selectively cancel an alarm raised by the detected condition of interest.

310. The system of claim 306, wherein the communication system includes a short-range communication network.

311. The system of claim 306, wherein the communication system includes a short-range communication network and a long-range communication network.

312. The system of claim 306, wherein the communication system is a long-range communication network.

313. The system of claim 312, wherein the long-range communication network is selected from a group consisting essentially of a wireless communications network, a cellular network, a satellite network, a paging network, a narrow-band Personal Communication Systems (PCS) network, and a narrow-band trunk radio.

314. A portable detection unit comprising:

a communications module;

a controller coupled to the communications module; and

at least one detector coupled to the control component.

315. The portable detection unit of claim 314, wherein the communications module is adapted to communicate wirelessly.

316. The portable detection unit of claim 314, wherein the at least one detector detects a motion event.

317. The portable detection unit of claim 314, wherein the at least one detector detects a breakage event.

318. The portable detection unit of claim 314, wherein the at least one detector detects a smoke condition.

319. The portable detection unit of claim 314, wherein the at least one detector detects a carbon monoxide condition.

320. The portable detection unit of claim 314, wherein the at least one detector detects a proximity condition.

321. The portable detection unit of claim 314, wherein the controller is adapted to coordinate the communications module so as to allow the communications module to transmit and receive information.

322. The portable detection unit of claim 314, wherein the controller is adapted to coordinate the communications module to receive arming instructions to arm the portable detection unit.

323. The portable detection unit of claim 314, wherein the controller is adapted to coordinate the communications module to receive disarming instructions to disarm the portable detection unit.

324. The portable detection unit of claim 314, wherein the controller is adapted to coordinate the communications module to receive cancellation instructions to cancel an alarm.

325. A portable detection unit comprising:
a communications module;
a controller coupled to the communications module;
at least one detector coupled to the control component; and
an output module to output at least one control signal.

326. The portable detection unit of claim 325, wherein the output module outputs the at least one control signal to control an appliance, wherein the appliance includes a home appliance or a building appliance, wherein the home appliance includes a coffee pot, and wherein the building appliance includes a heating unit, a ventilation unit, or an air conditioning unit.

327. The portable detection unit of claim 325, wherein the output module outputs the at least one control signal to actuate an audible annunciator.

328. The portable detection unit of claim 325, wherein the output module outputs the at least one control signal to actuate a visual annunciator.

329. The portable detection unit of claim 325, wherein the output module outputs the at least one control signal selected from a group consisting essentially of changes in voltages, impedance, current, magnetic field, electromagnetic energy, radio frequency signals, infrared signals, optical signals, audio signals, and mechanical energy signals.

330. The portable detection unit of claim 325, wherein the output module outputs the at least one control signal consisting essentially of analog waveform and digital waveform.

331. The portable detection unit of claim 325, wherein the portable detection unit is adapted to be self-powered.

332. The portable detection unit of claim 325, wherein the portable detection unit is adapted to be powered by an auxiliary power supply.

333. The portable detection unit of claim 325, wherein the portable detection unit is adapted to be charged by an auxiliary power supply.

334. The portable detection unit of claim 325, wherein the communications module includes a short-range module and a network module.

335. The portable detection unit of claim 325, wherein the communications module includes a short-range module.

336. The portable detection unit of claim 325, wherein the communications module includes a network module.

337. The portable detection unit of claim 336, wherein the network module is selectively adapted to communicate long-range, intermediate-range, and short-range.

338. The portable detection unit of claim 336, wherein the network module is automatically adapted to communicate long-range, intermediate-range, and short-range.

339. The portable detection unit of claim 336, wherein the network module is a module selected from a group consisting essentially of a cellular communications module, a paging module, a two-way paging module, a satellite module, a wideband Personal Communication System (PCS) module, a narrowband Personal Communication System (PCS) module, a wideband trunk radio module, and a narrowband trunk radio module.

340. The portable detection unit of claim 336, wherein the network module includes a combination of a cellular communications module, a paging module, a two-way paging module, a satellite module, a wideband Personal Communication System (PCS) module, a narrowband Personal Communication System (PCS) module, a wideband trunk radio module, and a narrowband trunk radio module.

341. The portable detection unit of claim 336, wherein the network module selectively switches among a group of communications protocols to maintain a desired communication.

342. A personal control panel comprising:
a communications module;
a controller coupled to the communications module; and
an input/output module.

343. The personal control panel of claim 342, wherein the communications module includes a short-range module and a network module.

344. The personal control panel of claim 342, wherein the communications module includes a short-range module.

345. The personal control panel of claim 342, wherein the communications module includes a network module.

346. The personal control panel of claim 345, wherein the network module is selectively adapted to communicate long-range, intermediate-range, and short-range.

347. The personal control panel of claim 345, wherein the network module is automatically adapted to communicate long-range, intermediate-range, and short-range.

348. The personal control panel of claim 345, wherein the network module is a module selected from a group consisting essentially of a cellular communications module, a paging module, a two-way paging module, a satellite module, a wideband Personal Communication System (PCS) module, a narrowband Personal Communication System (PCS) module, a wideband trunk radio module, and a narrowband trunk radio module.

349. The personal control panel of claim 345, wherein the network module includes a combination of a cellular communications module, a paging module, a two-way paging module, a satellite module, a wideband Personal Communication System (PCS) module, a narrowband Personal Communication System (PCS) module, a wideband trunk radio module, and a narrowband trunk radio module.

350. The personal control panel of claim 345, wherein the network module selectively switches among a group of communications protocols to maintain a desired communication.

351. The personal control panel of claim 342, wherein the controller is adapted to coordinate an entry of at least one instruction to the input/output module, and wherein the controller is adapted to coordinate a transmission of the at least one instruction.

352. The personal control panel of claim 342, wherein the input/output module includes a keypad.

353. The personal control panel of claim 342, wherein the input/output module includes a display.

354. The personal control panel of claim 342, wherein the input/output module includes an audio indicator to indicate a detected event.

355. The personal control panel of claim 342, wherein the input/output module includes a visual indicator to indicate a detected event.

356. The personal control panel of claim 342, wherein the input/output module includes a vibration indicator to indicate a detected event.

357. The personal control panel of claim 342, wherein the input/output module includes a combination of an audio indicator, a visual indicator, and a vibration indicator.

358. The personal control panel of claim 342, wherein the personal control panel is adapted to be self-powered.

359. The personal control panel of claim 342, wherein the personal control panel is adapted to be powered by an auxiliary power supply.

360. The personal control panel of claim 342, wherein the personal control panel is adapted to be charged by an auxiliary power supply.

361. A system comprising:

a first portable detection unit to provide an alarm upon a detection of an event of interest;

a first personal control panel adapted to receive the alarm;

a central station selectively adapted to receive the alarm; and

a bidirectional long-range wireless network to facilitate communication among the first portable detection unit, the first personal control panel, and the central station.

362. The system of claim 361, further comprising a second portable detection unit, wherein the second portable detection unit is within a short-range communication distance with the first personal control panel, and wherein the second portable detection unit is adapted to communicate directly with the first personal control panel.

363. The system of claim 361, further comprising a second personal control panel.

364. The system of claim 363, wherein the second personal control panel is adapted to communicate with the first personal control panel if the second personal control panel is within a short-range communication distance with the first personal control panel.

365. The system of claim 363, wherein the second personal control panel is adapted to communicate with the first personal control panel through the bi-directional, long-range, wireless network.

366. The system of claim 361, wherein the first portable detection unit is adapted to communicate with at least one personal control panel.

367. The system of claim 363, wherein the second personal control panel is adapted to assume an identity of the first personal control panel so as to have a predetermined level of access of the first personal control panel.

368. The system of claim 367, wherein the second personal control panel is adapted to assume the identity of the first personal control panel by entering a security code.

369. The system of claim 361, wherein the bi-directional long-range wireless network is a network selected from a group consisting essentially of a cellular communications network, a paging network, a two-way paging network, a satellite network, a wideband Personal Communication System (PCS) network, a narrowband Personal Communication System (PCS) network, a wideband trunk radio network, and a narrowband trunk radio network.

370. The system of claim 361, wherein the bi~directional long-range wireless network includes a combination of a cellular communications network, a paging network, a two-way paging network, a satellite network, a wideband Personal Communication System (PCS) network, a narrowband Personal Communication System (PCS) network, a wideband trunk radio network, and a narrowband trunk radio network.

371. The system of claim 361, wherein the bi-directional long-range wireless network selectively switches among a group of communications protocols to maintain a desired communication.

372. The system of claim 361, wherein the bi-directional long-range wireless network is adapted to receive a message that originates from one type of network and transmit the message in another type of network.

373. The system of claim 361, wherein the bi-directional long-range wireless network includes a network selected from a group consisting essentially of ReFLEX 25, ReFLEX 50, PCS, CDMA, TDMA, POCSAG, FLEX, RAMNET, Ardis, Alarmnet, Procom, cellemetry, Microburst, and CDPD.

374. The system of claim 361, further comprising a dispatch assistance.

375. The system of claim 374, wherein the central station notifies the dispatch assistance upon receiving the alarm.

376. The system of claim 361, wherein the first personal control panel or the second personal control panel determines whether the alarm is false, wherein the central station is inhibited from receiving the alarm if the first personal control panel or the second control panel determines that the alarm is false.

377. The system of claim 361, wherein the first portable detection unit includes at least one among a motion detector, a door switch, a water sensor, a smoke detector, a temperature sensor, or a combination of the motion detector, the door switch, the water sensor, the smoke detector, and the temperature sensor.

378. The system of claim 361, wherein the first portable detection unit includes a bi-directional, long-range wireless communication device.

379. The system of claim 378, wherein the bi-directional, long-range wireless communication device includes a device selected from a group consisting essentially of a CreataLink device, a CreataLink2 device, and a CreataLink2XLT device.

380. The system of claim 361, wherein the first personal control panel is a device selected from a group consisting essentially of a one-way wireless device, a standard pager, a two-way pager, a programmable two-way paging device, a Motorola PageWriter 2000 based device, a personal digital assistant, an analog cellular phone, a digital cellular phone, and a hand-held computer.

381. The system of claim 380, wherein the hand-held computer includes a device selected from a group consisting essentially of a series of Palm devices manufactured by 3-COM.

382. The system of claim 177 or 190, wherein the bi-directional long distance wireless network is adapted to supervise traffic for billing.

383. The system of claim 361, wherein the first portable detection unit includes a GPS transmitter to transmit a location of the first portable detection unit.

384. The system of claim 361, wherein the first personal control panel is adapted to display a map indicative of a location of the first portable detection unit.

385. The system of claim 361, wherein the first personal control panel is adapted to display a map indicative of a location of the first portable detection unit, wherein the map is downloaded from a central storage facility.

386. The system of claim 361, wherein the first personal control panel is adapted to display a message showing a direction of the first portable detection unit.

387. The system of claim 386, wherein the message further shows a distance of the first personal control panel from the first portable detection unit.

388. The system of claim 361, wherein the first personal control panel is adapted to allow a user to confirm the event of interest before the alarm is transmitted to the central station.

389. The system of claim 361, wherein the first personal control panel is adapted to arm or disarm the first portable detection unit.

390. The system of claim 361, wherein the first portable detection unit is adapted to transmit a first short, predetermined, digitally encoded message to the first personal control panel.

391. The system of claim 390, wherein the central station includes a look-up table, wherein the central station is adapted to use the look-up table to decode the encoded message.

392. The system of claim 390, wherein the bi-directional long-range wireless network includes a look-up table, wherein the bi-directional long-range wireless network is adapted to use the look-up table to decode the encoded message.

393. The system of claim 390, wherein the first personal control panel is adapted to transmit a second short, predetermined, digitally encoded message to either the central station or the first portable detection unit.

394. The system of claim 393, wherein the second short, predetermined, digitally encoded message is presaved.

395. The system of claim 390, wherein the first short, predetermined, digitally encoded message is encoded by a predetermined register size, order, and meaning.

396. A system comprising:

a motion detector to detect an event of interest; and

a two-way pager to receive the event of interest, wherein the two-way pager is adapted to control the motion detector upon receiving the event of interest.

397. The system of claim 312, wherein the long-range communication network includes a wireless communication network, wherein the wireless communication network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

398. The system of claim 312, wherein the long-range communication network includes a wireless communication network, wherein the wireless communication network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

399. The system of claim 312, wherein the long-range communication network includes a cellular network, wherein the cellular network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

400. The system of claim 312, wherein the long-range communication network includes a satellite network, wherein the satellite network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

401. The system of claim 312, wherein the long-range communication network includes a paging network, wherein the paging network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

402. The system of claim 312, wherein the long-range communication network includes a narrow-band Personal Communication Systems (PCS) network, wherein the narrow-band Personal Communication Systems (PCS) network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

403. The system of claim 312, wherein the long-range communication network includes a narrow-band trunk radio, wherein the narrow-band trunk radio includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

404. The system of claim 336, wherein the network module includes a cellular communications module, wherein the cellular communications module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

405. The system of claim 336, wherein the network module includes a paging module, wherein the paging module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

406. The system of claim 336, wherein the network module includes a two-way paging module, wherein the two-way paging module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

407. The system of claim 336, wherein the network module includes a satellite module, wherein the satellite module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

408. The system of claim 336, wherein the network module includes a wideband Personal Communication System (PCS) module, wherein the wideband Personal

Communication System (PCS) module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

409. The system of claim 336, wherein the network module includes a narrowband Personal Communication System (PCS) module, wherein the narrowband Personal Communication System (PCS) module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

410. The system of claim 336, wherein the network module includes a wideband trunk radio module, wherein the wideband trunk radio module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

411. The system of claim 336, wherein the network module includes a narrowband trunk radio module, wherein the narrowband trunk radio module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

412. The system of claim 340, wherein the cellular communications module includes a first control channel, and wherein the first control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the paging module includes a second control channel, and wherein the second control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the two-way paging module includes a third control channel, and wherein the third control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the satellite module includes a fourth control channel, and wherein the fourth control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the wideband Personal Communication System (PCS) module includes a fifth control channel, and wherein the fifth control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the narrowband Personal Communication System (PCS) module includes a sixth control channel, and wherein the sixth control channel includes separate

frequencies, separate time slices, or separate bandwidths, wherein the wideband trunk radio module includes a seventh control channel, and wherein the seventh control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the narrowband trunk radio module includes a eighth control channel, and wherein the eighth control channel includes separate frequencies, separate time slices, or separate bandwidths.

413. The system of claim 345, wherein the network module includes a cellular communications module, wherein the cellular communications module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

414. The system of claim 345, wherein the network module includes a paging module, wherein the paging module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

415. The system of claim 345, wherein the network module includes a two-way paging module, wherein the two-way paging module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

416. The system of claim 345, wherein the network module includes a satellite module, wherein the satellite module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

417. The system of claim 345, wherein the network module includes a wideband Personal Communication System (PCS) module, wherein the wideband Personal Communication System (PCS) module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

418. The system of claim 345, wherein the network module includes a narrowband Personal Communication System (PCS) module, wherein the narrowband Personal

Communication System (PCS) module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

419. The system of claim 345, wherein the network module includes a wideband trunk radio module, wherein the wideband trunk radio module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

420. The system of claim 345, wherein the network module includes a narrowband trunk radio module, wherein the narrowband trunk radio module includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

421. The system of claim 349, wherein the cellular communications module includes a first control channel, and wherein the first control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the paging module includes a second control channel, and wherein the second control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the two-way paging module includes a third control channel, and wherein the third control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the satellite module includes a fourth control channel, and wherein the fourth control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the wideband Personal Communication System (PCS) module includes a fifth control channel, and wherein the fifth control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the narrowband Personal Communication System (PCS) module includes a sixth control channel, and wherein the sixth control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the wideband trunk radio module includes a seventh control channel, and wherein the seventh control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the narrowband trunk radio module includes a eighth control channel, and wherein the eighth control channel includes separate frequencies, separate time slices, or separate bandwidths.

422. The system of claim 361, wherein the bi-directional long-range wireless network includes a cellular communications network, wherein the cellular communications network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

423. The system of claim 361, wherein the bi-directional long-range wireless network includes a paging network, wherein the paging network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

424. The system of claim 361, wherein the bi-directional long-range wireless network includes a two-way paging network, wherein the two-way paging network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

425. The system of claim 361, wherein the bi-directional long-range wireless network includes a satellite network, wherein the satellite network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

426. The system of claim 361, wherein the bi-directional long-range wireless network includes a wideband Personal Communication System (PCS) network, wherein the wideband Personal Communication System (PCS) network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

427. The system of claim 361, wherein the bi-directional long-range wireless network includes a narrowband Personal Communication System (PCS) network, wherein the narrowband Personal Communication System (PCS) network includes a control channel,

and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

428. The system of claim 361, wherein the bi-directional long-range wireless network includes a wideband trunk radio network, wherein the wideband trunk radio network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

429. The system of claim 361, wherein the bi-directional long-range wireless network includes a narrowband trunk radio network, wherein the narrowband trunk radio network includes a control channel, and wherein the control channel includes separate frequencies, separate time slices, or separate bandwidths.

430. The system of claim 361, wherein the cellular communications network includes a first control channel, and wherein the first control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the paging network includes a second control channel, and wherein the second control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the two-way paging network includes a third control channel, and wherein the third control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the satellite network includes a fourth control channel, and wherein the fourth control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the wideband Personal Communication System (PCS) network includes a fifth control channel, and wherein the fifth control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the narrowband Personal Communication System (PCS) network includes a sixth control channel, and wherein the sixth control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the wideband trunk radio module includes a seventh control channel, and wherein the seventh control channel includes separate frequencies, separate time slices, or separate bandwidths, wherein the narrowband trunk radio network includes a eighth control channel, and wherein the eighth control channel includes separate frequencies, separate time slices, or separate bandwidths.

431. A system substantially as shown and described.

432. A device substantially as shown and described.

433. A method substantially as shown and described.

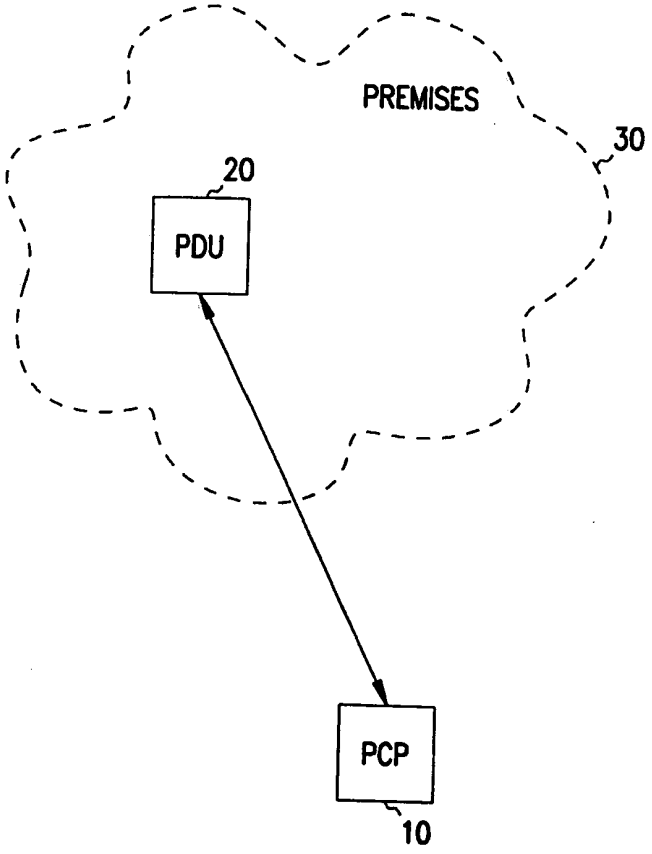

FIG. 1

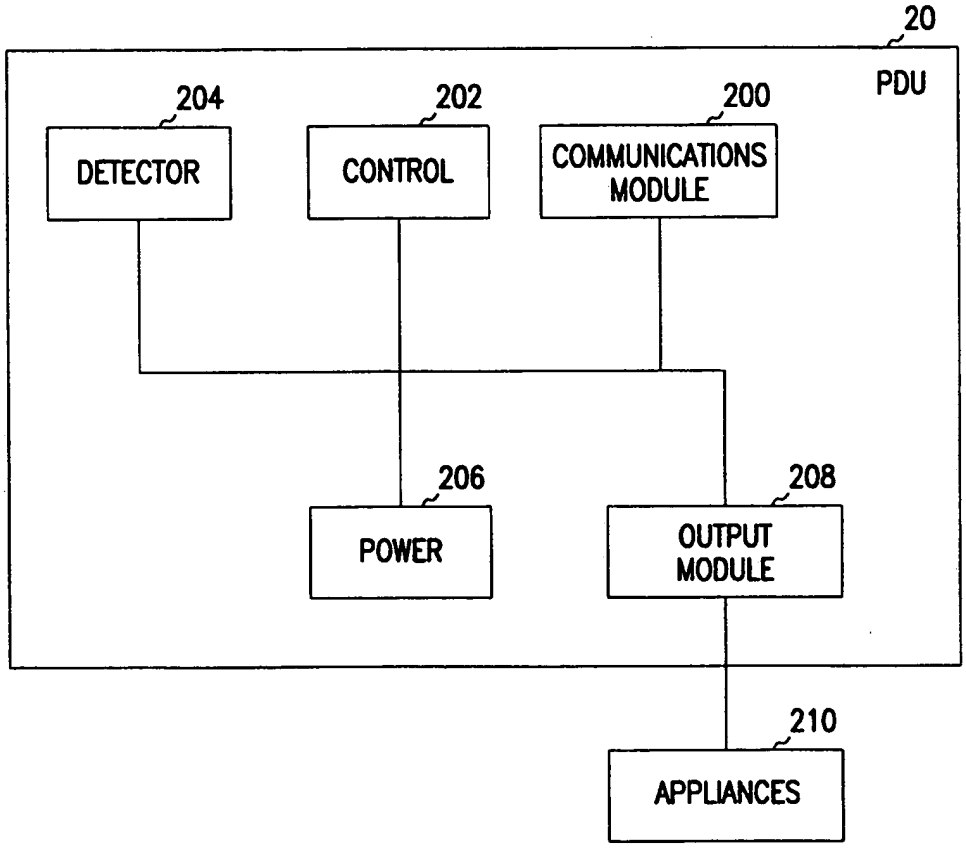
20
PDU
204
DETECTOR
202
CONTROL
200
COMMUNICATIONS MODULE
206
POWER
208
OUTPUT MODULE
210
APPLIANCES

FIG. 2

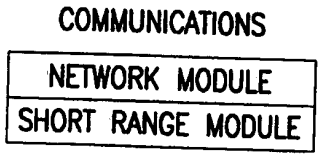

FIG. 3A

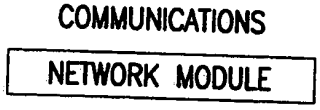

FIG. 3B

FIG. 3C

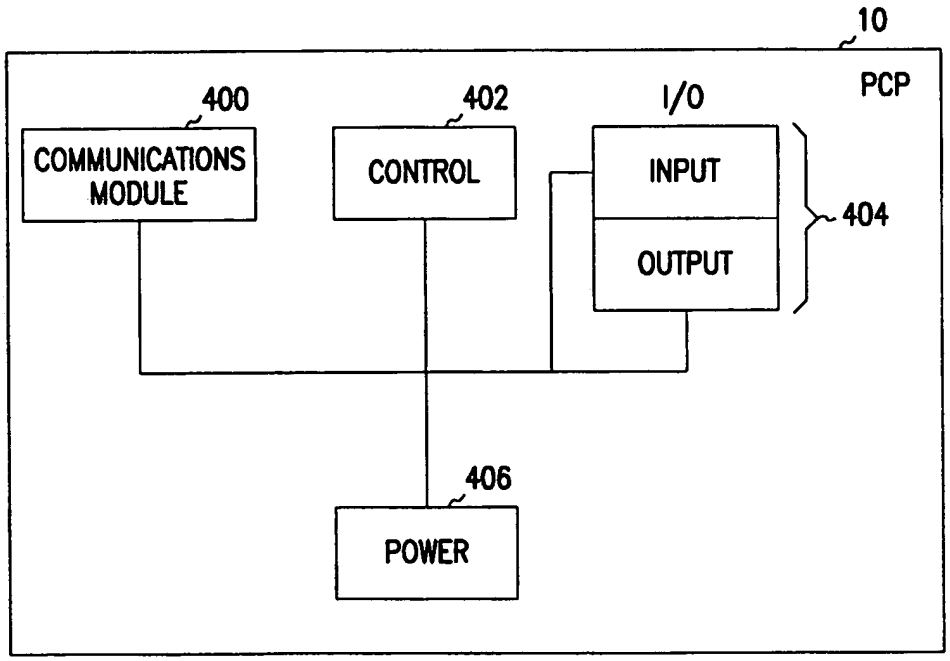
10
PCP
400
COMMUNICATIONS MODULE
402
CONTROL
I/O
INPUT
OUTPUT
404
406
POWER

FIG. 4

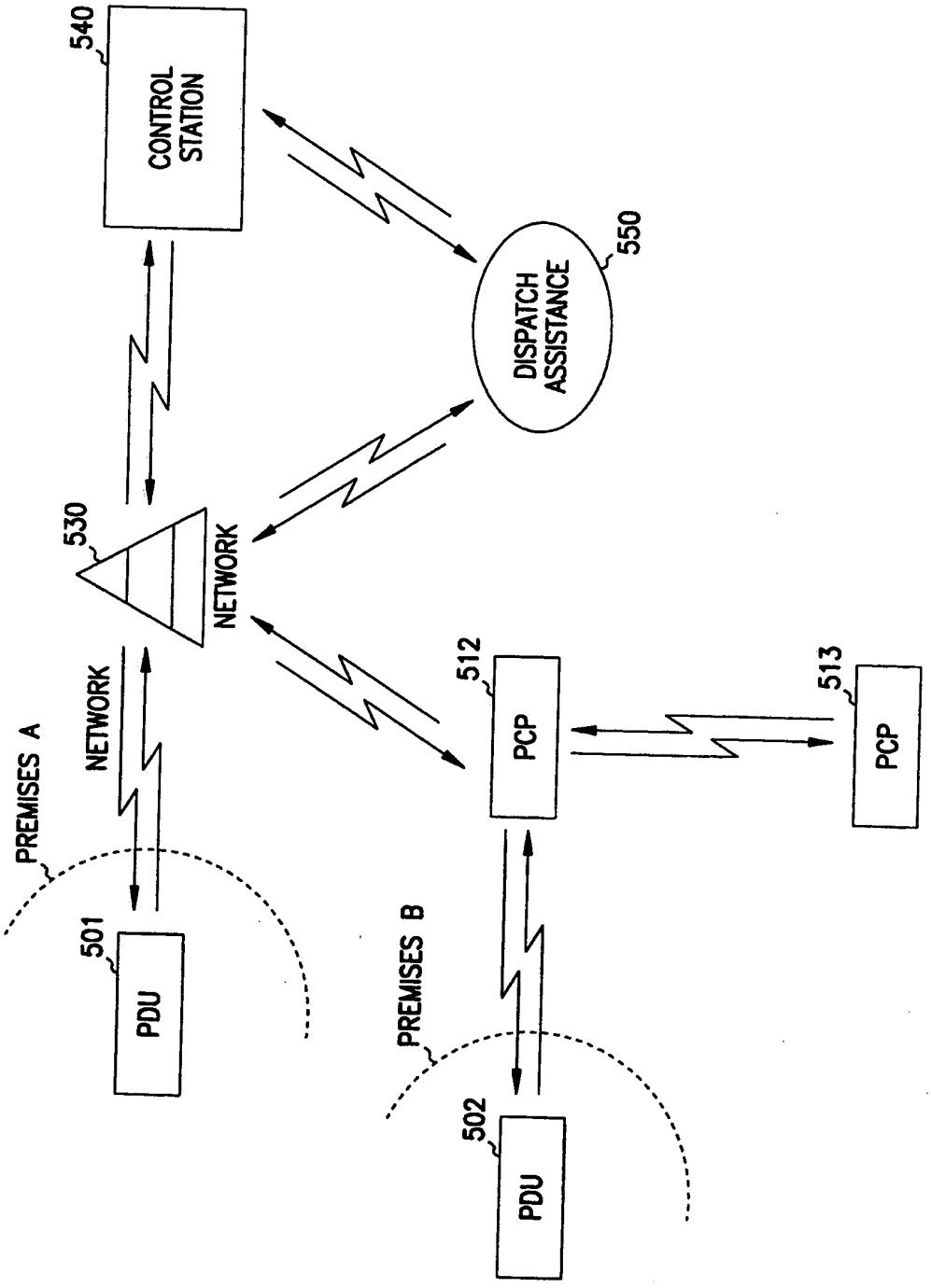
540
CONTROL STATION
550
DISPATCH ASSISTANCE
530
NETWORK
NETWORK
PREMISES A
501
PDU
512
PCP
513
PCP
PREMISES B
502
PDU

FIG. 5

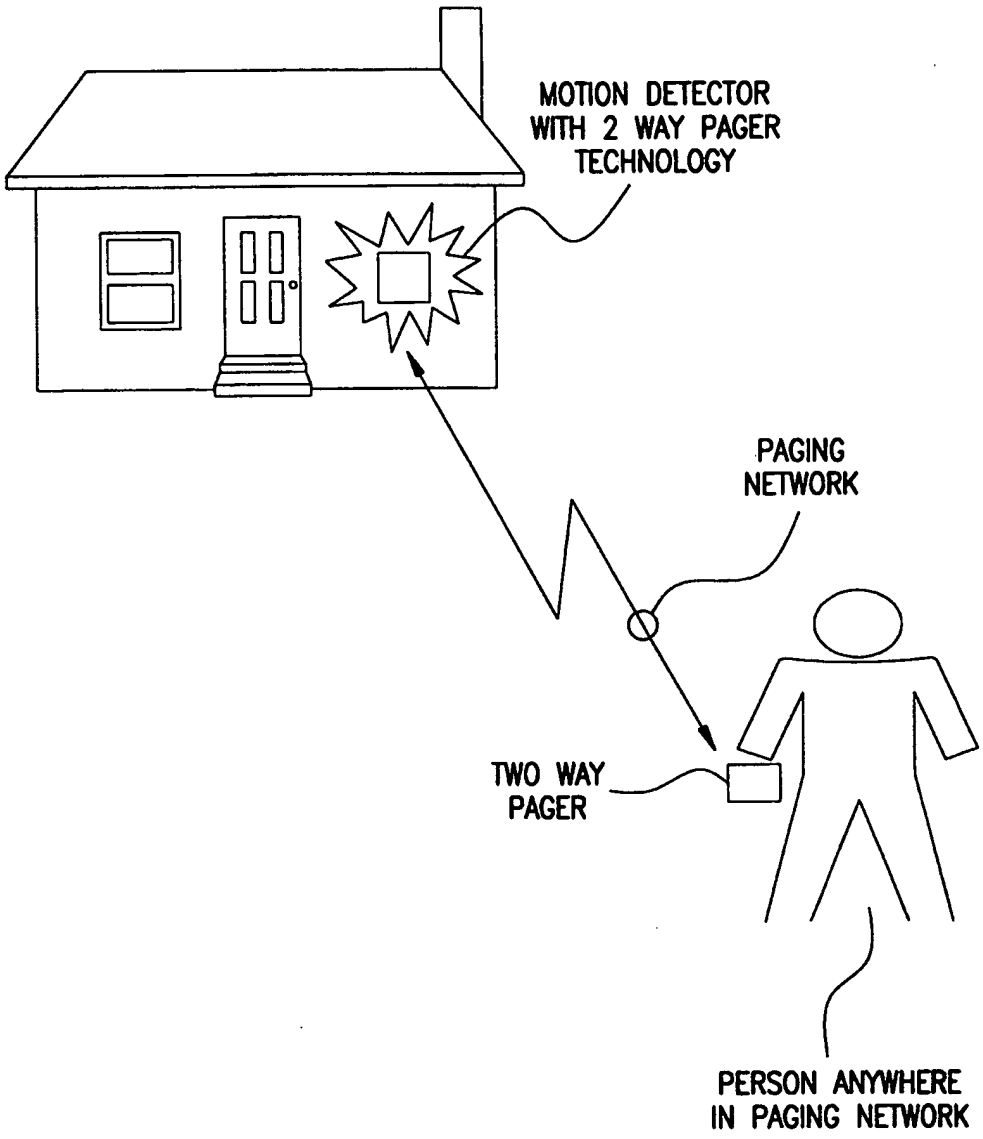
MOTION DETECTOR
WITH 2 WAY PAGER
TECHNOLOGY
PAGING
NETWORK
TWO WAY
PAGER
PERSON ANYWHERE
IN PAGING NETWORK

FIG. 6

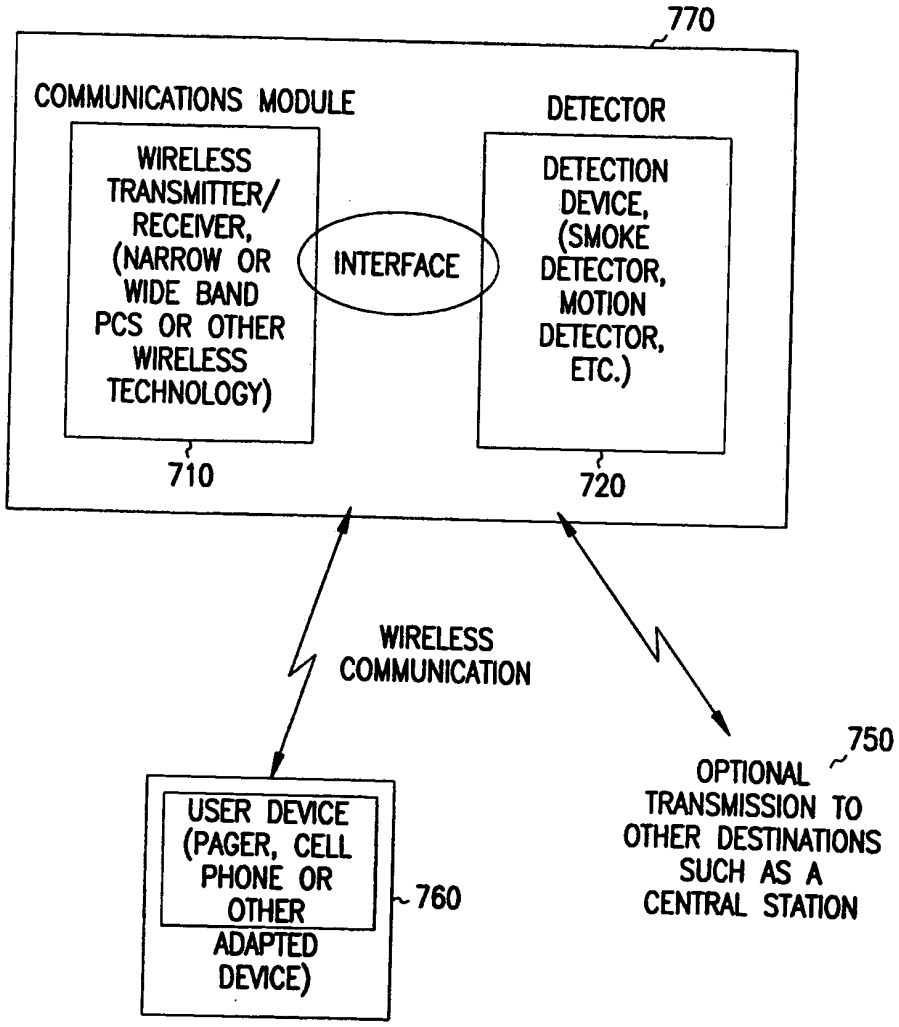
770
COMMUNICATIONS MODULE
DETECTOR
WIRELESS TRANSMITTER/ RECEIVER, (NARROW OR WIDE BAND PCS OR OTHER WIRELESS TECHNOLOGY)
INTERFACE
DETECTION DEVICE, (SMOKE DETECTOR, MOTION DETECTOR, ETC.)
710
720
WIRELESS COMMUNICATION
750
OPTIONAL TRANSMISSION TO OTHER DESTINATIONS SUCH AS A CENTRAL STATION
USER DEVICE (PAGER, CELL PHONE OR OTHER ADAPTED DEVICE)
760

FIG. 7

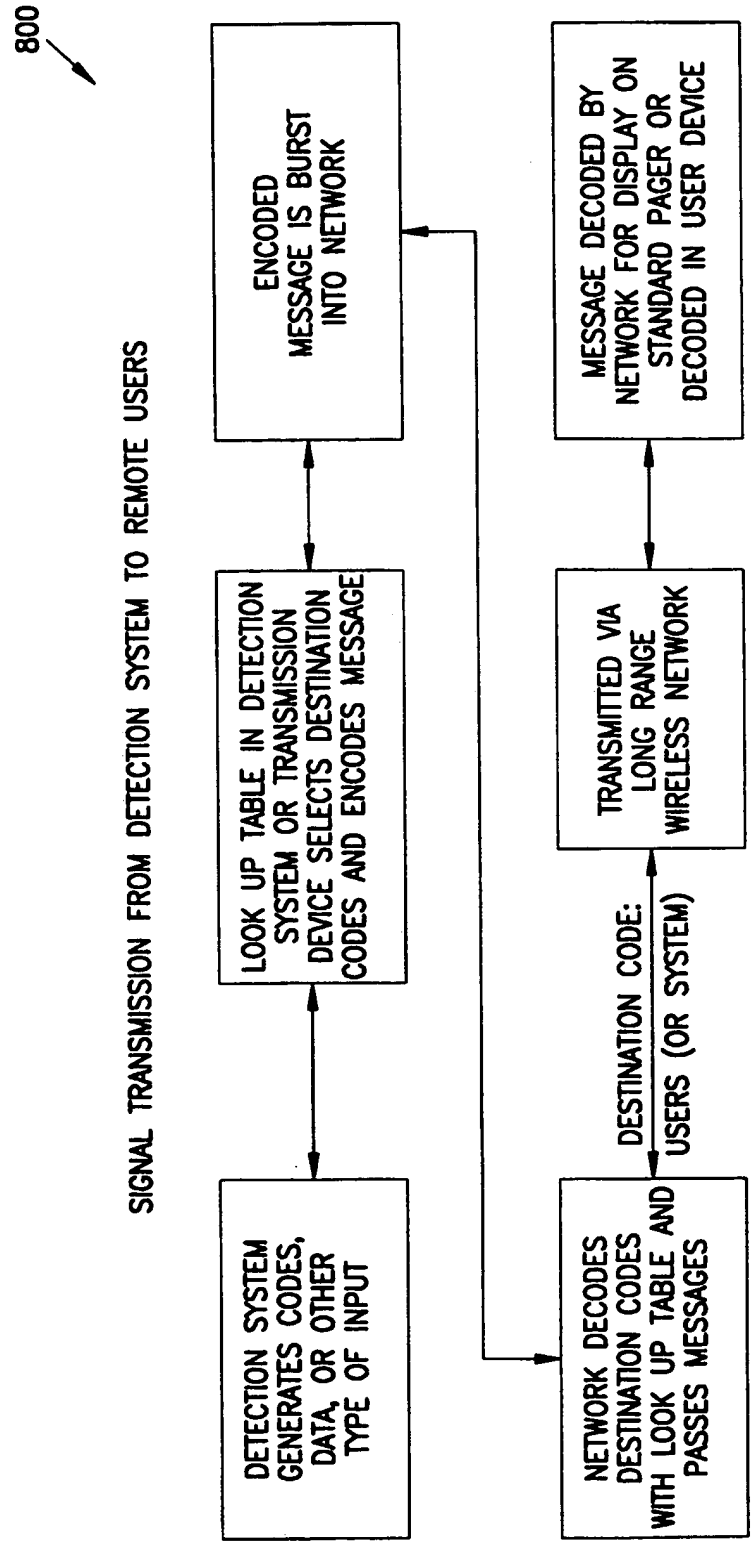
800
SIGNAL TRANSMISSION FROM DETECTION SYSTEM TO REMOTE USERS
DETECTION SYSTEM GENERATES CODES, DATA, OR OTHER TYPE OF INPUT
LOOK UP TABLE IN DETECTION SYSTEM OR TRANSMISSION DEVICE SELECTS DESTINATION CODES AND ENCODES MESSAGE
ENCODED MESSAGE IS BURST INTO NETWORK
NETWORK DECODES DESTINATION CODES WITH LOOK UP TABLE AND PASSES MESSAGES
DESTINATION CODE: USERS (OR SYSTEM)
TRANSMITTED VIA LONG RANGE WIRELESS NETWORK
MESSAGE DECODED BY NETWORK FOR DISPLAY ON STANDARD PAGER OR DECODED IN USER DEVICE

FIG. 8

NUMBER OF BITS	OPTION COUNT	DESCRIPTION
3	8	DESTINATION CODE, FOR EXAMPLE A LIST OF OPTIONAL USER DESTINATIONS IS STORED IN THE WIRELESS NETWORK. THE DESTINATION CODE TELLS THE NETWORK WHICH OPTIONAL DESTINATION SET (8 TOTAL LOOKUP SETS) TO USE FOR THIS MESSAGE. A SET MAY INCLUDE ONE OR MORE POTENTIAL DESTINATIONS.
0–2	0–4	BACKUP DESTINATION CODE: DESIGNATES A BACKUP DESTINATION OPTION IF THE MESSAGE IS UNDELIVERABLE TO THE PRIMARY DESTINATION. THE NETWORK STORES THE BACKUP DESTINATION. THIS INFORMATION COULD BE OPTIONALLY STORED IN THE NETWORK DESTINATION CODE LOOKUP SET DESCRIPTION.
4	16	TYPE OF MESSAGE CODE: THIS DESIGNATES THE TYPE, MEANING OR CONDITION OF THE MESSAGE BEING SENT. FOR EXAMPLE, FIRE, BURGLARY, MEDICAL OR ACTIONS THE USER TAKES WITH THEIR SECURITY SYSTEM, WOULD ALL BE DESIGNATED ALARM TYPES OR CONDITIONS. THE NETWORK WOULD USE THE DESIGNATED LOOK UP TABLE FOR THE TRANSMITTER INVOLVED IN ORDER TO TRANSLATE THE MESSAGE (IF NECESSARY) BEFORE DELIVERY. OTHERWISE, THE MEANING CAN BE TRANSLATED UPON RECEIPT WITH A DESIGNATED LOOK UP TABLE THERE.
2–4	4–16	MODIFIER CODE: THIS DESIGNATES FURTHER INFORMATION ABOUT THE MESSAGE CODE. FOR EXAMPLE, STATUS INFORMATION, LOCATION (BY ZONE OF DETECTION OR AREA) INFORMATION OR OTHER INFORMATION.

FIG. 9